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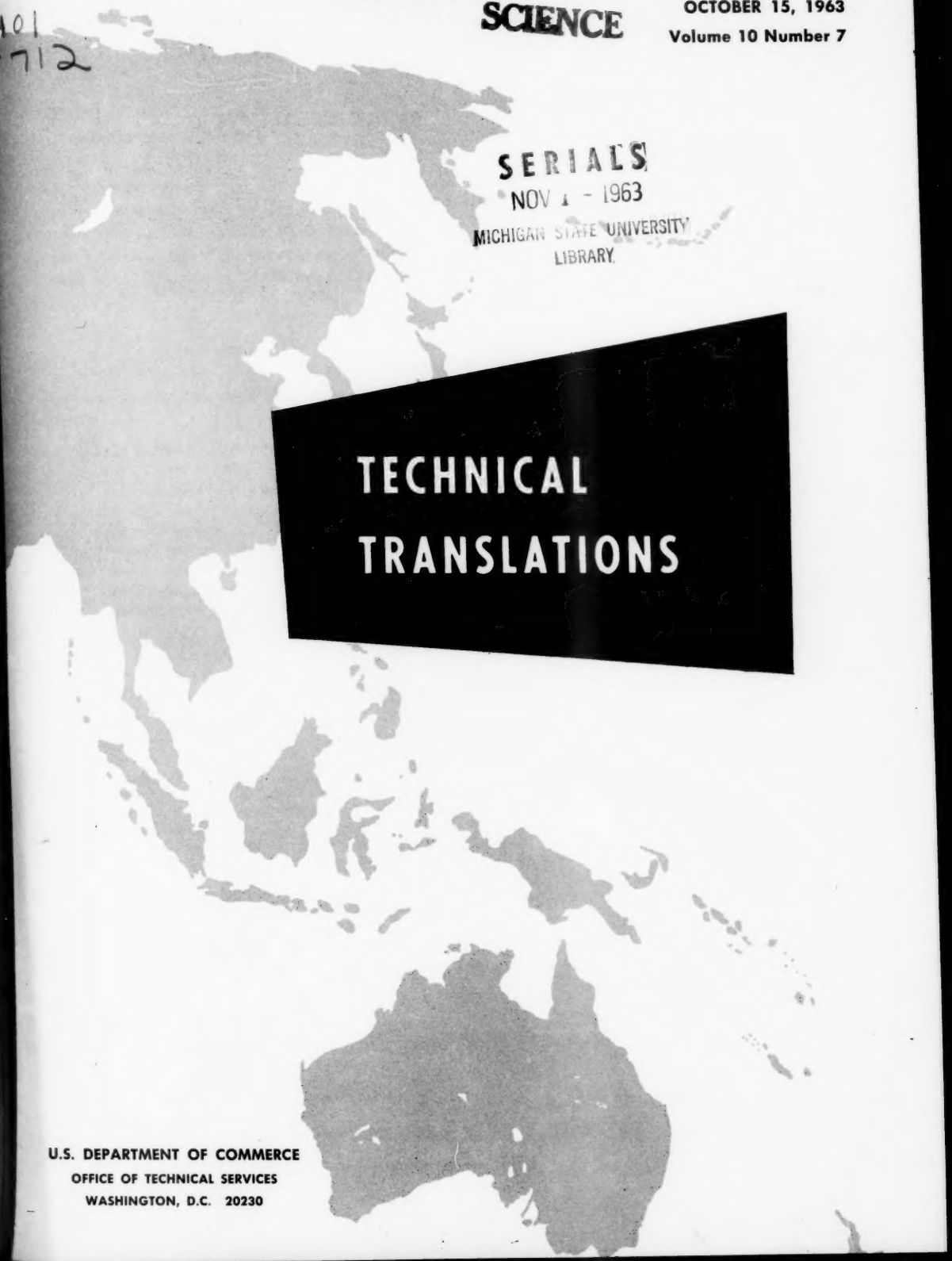

TECHNICAL TRANSLATIONS

U.S. DEPARTMENT OF COMMERCE
OFFICE OF TECHNICAL SERVICES
WASHINGTON, D.C. 20230

TECHNICAL TRANSLATIONS

U.S. DEPARTMENT OF COMMERCE
Luther H. Hodges, Secretary

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UNITED STATES DEPARTMENT OF COMMERCE
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TECHNICAL TRANSLATIONS

Volume 10, Number 7 | Pages 719 - 866 | October 15, 1963

*Descriptors marked with an asterisk are listed in the subject index.

BIBLIOGRAPHY

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 244 (GENERAL SERIES). 19 July 63, 12p. JPRS: 20244.
Order from OTS $0.50 63-31327

Abstract trans. of Akademie der Wissenschaften, Berlin. Monatsberichte (East Germany) 1963, v. 5, no. 5, p. 277-340.

DESCRIPTORS: *Abstracts, Bibliographies, Mathematics, Geophysics, Cryogenics, Magnetohydrodynamics, Solid state physics, Pharmacology, *Fluid dynamics, *Spectroscopy, Physical chemistry, Geology, Immunology.

NLL TRANSLATIONS BULLETIN, 1963, VOL. 5, NO. 6, p. 483-578. June 63, 1v.
Order from HMSO $0.77, $9.86/year

This bulletin includes books received from the USSR, reports on visits, translations available for purchase or on loan from National Lending Library for Science and Technology and trans. of Glavnyi Botanicheskii Sad [Pushinskoe]. Byulleten' (USSR) 1960, v. 38, p. 104-108; Izvestiya (USSR) 1963, 26 Jan, p. 1, 3; Pravda [Moscow] 1963, no. 48, 17 Feb; Kholodil'naya Tekhnika (USSR) 1962 [v. 39] no. 6, p. 1-8; Avtomobil'nye Dorogi (USSR) 1962 [v. 25] no. 10, p. 4-6.

DESCRIPTORS: *Translations, Reports, *Bibliographies, Scientific research, *Plants (Botany), China, *Industrial production, Economics, Metallurgy, *Smelting, Oxygen, *Refrigeration systems, *Roads, *Asphalt, *Concrete, Coatings.

Contents:
Botany in the Chinese People's Republic, by M. V. Kul'tiasov
Summary of achievement of the state plan for the development of the national economy of the USSR during 1962
A powerful accelerator in non-ferrous metallurgy, by N. Kubyshev
Development of the refrigeration economy of the USSR during the period 1959-61, by I. M. Geller
Asphalt concrete re-surfacing with non-skid finish, by N. V. Gorelyshev and others.

NLL TRANSLATIONS BULLETIN, 1963, VOL. 5, NO. 7, p. 579-682. July 63, 1v.
Order from HMSO $0.77, $9.86/year

This bulletin includes books received from the SSSR, translations available on loan from National Lending Library for Science and Technology and trans. of Akademiya Nauk SSSR. Vestnik, 1963 [v. 33] no. 1, ##p. 32-37, ## 45-50; Pravda [Moscow] (USSR) 1963, 22 Mar, p. 2; Akademiya Nauk SSSR. Sibirskoe Otdelenie. Izvestiya, 1962, no. 10, p. 3-12.
##Other translations are available from OTS $0.75 in 63-21738, JPRS-19020, 30 Apr 63, 23p. and $0.50 in 63-21472, JPRS-18488, 2 Apr 63 [21]p.

DESCRIPTORS: *Translations, Reports, *Bibliographies, Scientific research, *Industrial production, *Chemical engineering, Materials, *Synthetic stones, Glass, Crystals, Scientific organizations.

Contents:
##The introduction of scientific achievements into production: From experiences at the Ukrainian Academy of Sciences, by G. S. Pisarenko
##The major problems of current chemical technology, by N. M. Zhavoronkov, Sitalls - a new universal material, by I. Kitaigorodskii and K. Bondarev
The Siberian Science Centre.

AGRICULTURE

Amagasa, Maeda and Shibada.
TRAITEMENT HYDROFUGE DES ENGRAIS D'UREE (Hydrofuge Treatment of Urea Fertilizer). 4p.
Order from OTS, ETC or CNRS $0.80 62-26506

Trans. in French of [published] Japanese patent 1302-1949 by Comp. In des Hautes Pressions de Tokyo, pub. 22 Apr 49.

DESCRIPTORS: *Urea, Crystals, Hydrochloric acid, Catalysts, *Formaldehyde, *Fertilizer.

Deschreider, A. R. and Frateur, J.
DETERMINATION OF BROMINATED DERIVATES IN REFINERY MOLASSES. 19 May 61, 10p. 12 refs.
Order from SLA $1.10 63-16300

Trans. of Ind[ustries Alimentaires et] Agr[icoles] (France) 1957, v. 74, p. 541-544.

DESCRIPTORS: *Carbohydrates, Food, Refineries, Bromination, Ammonium radicals, *Bromine.

Molasses can contain quaternary ammonium. The presence, besides the dangers which it presents for the animals, receiving molasses containing fodder, can provoke irregularities in the manufacture of yeast; especially the quaternary ammonium, or more exactly the brominated quaternary ammoniums, which have been considered as evidence. It is hardly possible to determine the latter with colorimetry, after having extracted them from the molasses. All attempts in this direction have proved to be inoperative. Only the total bromine content in yeast permits to determine these compositions, considering the fact that the normal molasses contains averagely 3p. p. m. of bromine. The bromine determination in the form of tetrabromofluorescein has established itself better adapted for molasses. (Author)

Ehrenberg, Paul.
THEORETICAL CONSIDERATION ABOUT THE PROBLEM OF THE EFFECTIVENESS OF A SOIL INOCULATION WITH UNATTACHEDLY LIVING, NITROGEN COLLECTING BACTERIA. [1963] 8p.
Order from SLA $1.10 63-16128

Trans. of Fühlings Landwirtschaftliche Zeitung (Germany) 1920, v. 69, no. 9/10, p. 161-166.

DESCRIPTORS: *Soils, *Bacteria, *Fertilizers.

Taperova, A. A. and Shul'gina, M. N.
PHYSICO-CHEMICAL ANALYSIS IN THE FIELD OF HYDROCHLORIC (ACID) TREATMENT OF PHOSPHATES. [1963] 12p. (figs. tables omitted) 12 refs.
Order from OTS or SLA $1.60 63-16429

Trans. of [Zhurnal Prikladnoi Khimii] (USSR) 1946, v. 19, no. 12, p. 1350-1357.
Another trans. is available from SLA as R-2623, 11p.

DESCRIPTORS: *Phosphates, *Hydrochloric acid, *Fertilizers, *Phosphoric acids, *Calcium compounds, *Oxides, *Phase studies, Water, Chlorides, Chemical analysis.

Zemkova, R. I.
USE OF THE LIGHT TRAPS IN THE MOUNTAIN REGION OF THE WESTERN SAYAN, tr. by C. C. Nikiforoff. Jan 63, 2p. (fig. omitted).
Order from OTS or SLA $1.10 63-19053

Trans. of [Zashchita Rastenii ot Vreditelei i Boleznei (USSR) 1962, v. 7, no. 6, p. 45].

DESCRIPTORS: *Ultraviolet radiation, *Pest control, Trees, Lepidoptera.

It is shown that ultraviolet light traps can be used for the study of harmful forest entomological fauna as well as in the study of dynamics of the numbers of pests and for delineation of the areas infested by the principal pest in time of their maximum propagation. (Author)

Plant Cultivation

A PROCESS FOR THE MANUFACTURE OF MIXED, EASILY SPREADABLE FERTILIZERS WITH A SUPERPHOSPHATE BASE. [1963] 2p.
Order from OTS or SLA $1.10 63-16091

Trans. of French patent 788,981 [gr. 1, cl. 2] appl. 18 Apr 35 [delivered 5 Aug 35] pub. 21 Oct 35 [in Germany 21 Apr 34] by Bamag-Meguin A.G.
Another trans. is available from LC or SLA mi$1.80, ph$1.80 as 60-16207 [1960] 3p.

DESCRIPTORS: Manufacturing methods, *Fertilizers, *Phosphates.

Asmaev, P. G. and Mokhnachev, I. G.
ON THE QUESTION OF CHANGING THE COMPOSITION AND PROPERTIES OF TOBACCO PROCESSED AT DIFFERENT TEMPERATURES. [1962] 10p. 12 refs.
Order from OTS or SLA $1.10 63-16924

Trans. of Tabak (USSR)1959, v. 20, no. 3, p. 55-59.
Another trans. is available from K-H $12.50 as K-H 11249-a [1962] 10p.

DESCRIPTORS: *Tobacco, Processing, Temperature.

Azin, L. A., Basov, A. M. and others.
PRE-SOWING TREATMENT OF SEED IN AN ELECTRIC FIELD, tr. by C. C. Nikiforoff. Dec 62, 10p. 4 refs.
Order from OTS or SLA $1.10 63-19050

Trans. of [Vestnik Sel'skokhozyaistvennoi Nauki (USSR) 1961, v. 6, no. 4, p. 109-115].

DESCRIPTORS: *Seeds, *Wheat, *Oats, *Electric currents, Electric fields, Growth.

Garanina, L. S.
BRINGING VALUABLE SPECIMENS OF VETCHLING INTO SELECTION (Privlech' v Selektsiyu Tsennye Obraztsy Chiny) tr. by A. Neal. [1962] [6]p. (foreign text included). [CSIRO] Trans. no. 5840.
Order from OTS or SLA $1.10 63-13235

Trans. of [Selektsiya i Semenovodstvo] (USSR) 1961 [v. 26] no. 1, p. 52-53.

DESCRIPTORS: *Plants (Botany), Cereals, Albumins, Selection.

Vetchlings are cultivated for hay and green feed for cattle and pigs. Because of its comparatively short vegetative period, the vetchling is used as a fallow crop and can also be grown for acquiring seeds. An investigation of about 400 samples of vetchling from various countries in Europe, Africa, Asia, and North America was made in order to study its biological properties and economical factors. The most productive plants in grain, green

mass, and hay, and most resistant to fungoid infestations were the samples from the European part of Russia. Vetchlings were found to have a high albumin content. About 10% of the experimental samples exceeded the standard of yield. The Tangiers species was found to be important for the selection of new species. It is resistant to diseases and vermin, does not tend to lodge, is distinguished by a large accumulation of nodules on the roots, and a high productivity of green matter and hay. Samples of red vetchling from Siberia had a high albumin content in the hay. An experiment was performed on mixed drillings of vetchlings with mustard.

Glinka, K. D.
TREATISE ON SOIL SCIENCE, 4 ED. REV., tr. by A. Gourevitch. 1963, 674p refs. PL-480 Agr.
Order from OTS $6.75 61-31002

Trans. of mono. Pochvovedenie, 4 ed. rev., Moscow/ Leningrad, 1931 [611p.].

DESCRIPTORS: *Soils, *Soil mechanics, Chemical properties, Physical properties, Mechanical properties, Classification.

Hoefker, H.
CO_2 FERTILIZATION. [1963] 14p. (figs. omitted) 2 refs.
Order from SLA $1.60 63-16075

Trans. of die Umschau [in Wissenschaft und Technik] (Germany) 1923, v. 27, no. 12, p. 179-184.

DESCRIPTORS: *Carbon dioxide, *Fertilizers, Nutrition, Plants (Botany), Soils.

Istvan, Imre.
PROTECTIVE BASKET FOR TREES, PARTICULARLY FRUIT TREES, GUARDING AGAINST DAMAGE BY RODENTS, tr. by L. H. 22 Apr 63, 5p. (figs. omitted).
Order from OTS or SLA $1.10 63-19275

Trans. of Hungarian patent 133,573, cl. X/g, appl. 9 May 42, pub. 1 Oct 47.

DESCRIPTORS: *Trees, *Protective coverings, *Rods, *Rabbits, Rodents, *Pest control, Fruits.

The protective basket of the invention consists of rods, which reach to the bottom of the tree and are arranged in generating lines (generatrices) of the vertical cylindrical superficies imagined around the trunk of the tree, these rods being in some places bound with one another in horizontal planes. The rods are so close to one another that the rodent has no access to the tree; the height of the rods should be such that the rodent would not be able to reach the tree even from the highest possible snow layer. (Author)

Kalantarov, M. I.
USE OF IMPULSES OF HIGH TENSION IN COTTON BREEDING. [1963] [5]p.
Order from OTS or SLA $1.10 63-19049

Trans. of [Akademiya Nauk Azerbaidzhanskoi SSR, Baku. Doklady] 1961, v. 17, no. 1, p. 25-29.

DESCRIPTORS: *Cotton, *Seeds, *Electromagnetic pulses, Electric potential, Growth.

It is shown that treatment of seed of cotton strain 1298 by high voltage impulses improves the quality of fiber and raises yields and the percentage of fiber in the cotton-wool.

Nikishin, F. M.
FLOWER POLLEN AND THE PROSPECTS FOR USING IT IN THE NATIONAL ECONOMY (Tsvetochnaya Ply'tsa i Perspektivy Ee Ispolzovaniya v Narodnom Khozyaistve). Apr 63 [9]p. 4 refs. RTS-2229.
Order from OTS or SLA $1.10 63-15970

Trans. of Botanicheskii Zhurnal (USSR) 1962, v. 47, no. 7, p. 982-986.

DESCRIPTORS: *Pollen, *Plants (Botany), Economics, Medicine, Pharmacology, Diet, Nutrition, Vitamins, Amino acids, metallurgy.

Flower pollen contains many vitamins, amino acids, proteins, oil and sugar. It can be used in the pharmaceutical industry, in metallurgy, and as an additive in livestock fodder. The most promising for pollen collection are those plants that flower abundantly and have polyanthous inflorescences or polyandrous flowers. Methods of collecting maize pollen were developed and tested over five years. The best method is to harvest the whole staminate inflorescences (panicles) and then to dry them and extract the pollen. In the first few hours of drying, much pollen is shed and it is of high quality. For high quality pollen, a well ventilated area is necessary. The pollen turns brown in high temperatures. The most effective mechanism for extraction of pollen from the panicles was a hammer-mill. The pollen was cleaned by sieving it through fine meshes. The best storage containers were hermetically sealed tubes.

Ryadnova, I. M.
QUALITATIVE CHANGES IN FRUIT BUDS DURING WINTER (Kachestvennye v Plodovykh Pochkakh v Zimnii Period) tr. by A. Neal. [1962] [16]p. (foreign text included) 6 refs. [CSIRO] Trans. no. 5750.
Order from OTS or SLA $1.60 63-15258

Trans. of Botanicheskii Zhurnal (USSR) 1960 v. 45 [no. 10] p. 1506-1511.

DESCRIPTORS: *Fruits, *Plants (Botany), Ecology, Climatology, Trees, *Starches, Fats, Carbohydrates, Lipids, Growth.

An investigation was made of the buds and shoots of plum, cherry, peach, and apricot trees by studying the sprouting of detached shoots, the composition of the plasmodesmata, the insulation of protoplasm, the character of plasmolysis, and the starch, sugar, fat and lipoid processes. In varieties whose winter tolerance varies acutely, the absence of plasmodesmata was identical and varied only slightly in different years. The absence of growth at the beginning of winter coincides with an absence of starch, lipoids, and fats in the cells. The time in which starch appears in the fruit buds is closely connected with seasonal conditions. Low temperatures hasten dissociation of the cells, loss of plasmodesmata, and appearance of starch. The more starch in the bud in spring, the more rapid its growth. The sugar content in fruit cells is constant in the autumn-winter period and does not increase during cold spells. After a large harvest the rest period is severely decreased. The longer the rest period of the trees, the less starch remains in the shoots and vice versa. The fruit buds of the apricot require a longer period of cold for the normal transition of the rest period than peaches.

Ryakhovskii, V. V.
AMOUNTS AND DATES FOR RELEASING TELENOMUS (MICROPHANURUS SEMISTRIATUS NEES) TO COMBAT EURYGASTER. [1961] [7]p. 4 refs.
Order from OTS or SLA $1.10 61-23034

Trans. of [Ukrayins'kyi Naukovo-Doslidnyi Instytut Zakhystu Roslyn. Nauchnye Trudy] (USSR) 1959, v. 8, p. 89-96.

DESCRIPTORS: Hymenoptera, Hemiptera, Insects, *Insect control, *Parasites, Eggs, Fertility, Reproduction, Inhibition, *Cereals.

In establishing norms for the release of Telenomus in combatting Eurygaster, a differential approach is necessary, depending on the date of release. Early release dates give the best results. With early release (at the beginning of Eurygaster ovirposition), much smaller norms of Telenomus release can be recommended than with late release (at the time of massive oviposition): 3 thousand Telenomus per hectare when there is one Eurygaster per sq m, adding half this norm for each additional bug per sq m. In the case of late release (during mass oviposition), two to three times as many Telenomus must be released as with early release. (Author)

Soldatov, P. K.
ON SELECTING VINE-PLANT SCIONS (O Klonovoi Selektsii Vinograda). [1962] [19]p. (foreign text included) 19 refs. [CSIRO] Trans. no. 5908.
Order from OTS or SLA $1.60 63-19104

Trans. of Vinodelie i Vinogradarstvo SSSR, 1956 [v. 16] no. 7, p. 42-49.

DESCRIPTORS: *Plants (Botany), Selection, Production.

Various research on the selection of scions of grape vines is summarized. One basis for selection is high fertility. Varieties of grapes are discused. Experiments on productivity are performed; the influence of good agricultural technology on productivity is pointed out. Phenotypes and morphological characteristics are considered in relation to selection of sub-varieties. A study is made of vegetative deviations that are of high economic value. Selection based on vegetative deviations seems to be more effective than that based on productivity. The development of reproduction organs from young cells obtained from old tissue is noted.

Strel'nikov, I. G.
INFLUENCE OF LATERALS ON THE PRODUCTIVITY OF SHOOTS IN THE LOWER ZONE OF THE FRUIT VINE (Vliyanie Pasynkov na Plodonoshenie Pobegov v Nizhnei Zone Plodovoi Lozy) tr. by A. Neal. [1962] [9]p. (foreign text included). [CSIRO] Trans-5779.
Order from OTS or SLA $1.10 63-15971

Trans. of Vinodelie i Vinogradarstvo SSSR. 1954 [v. 14] no. 2, p. 23-25.

DESCRIPTORS: *Plants (Botany), *Fruits, Growth.

To study the effect of laterals on the formation of buds and on the productivity of the shoots of the grape vine, the productivity of the buds of the hibernating eyes along the shoot was determined in two cases: laterals left on and laterals removed. Laterals in variant I were removed as soon as they appeared; laterals in variant II were pinched off after the appearance of 4 to 5 leaves, leaving the lower three. An analysis was made of the plastic substances in the lower, middle, and upper parts of the shoots. Where the leaves aided in the accumulation of plastic substances, there were more dry substances in all zones of the shoots. In variant II the internodes of the lower zone of the shoot contained as much, in total content, dry substances, nitrogen, starch, and albumen as the internodes of the middle zone of the shoot in variant I, and exceeded that of the first and third zones of variant I. Buds situated on canes richer in plastic substances are likely to produce more fruitful shoots in the following vegetative period. Experimental data showed that removal of the laterals from the shoots has a negative effect on the formation of the buds, and strongly depresses the productivity. Leaving an optimal number of leaves on the laterals increases the productivity of the buds.

Tyutyutnik, A. F.
ROLE OF LATERALS IN THE FORMATION OF HIBERNATING BUDS OF GRAPES (Rol' Pasynkov v Formirovanii Zimuyushshchikh Pochek Vinograda) tr. by A. Neal. [1962] [5]p. (foreign text included). [CSIRO] Trans. no. 5778.
Order from OTS or SLA $1.10 63-13606

Trans. of [Vinodelie i Vinogradarstvo SSSR] 1953 [v. 13] no. 8, p. 36-37.

DESCRIPTORS: *Plants (Botany), *Fruits, Growth.

Sixty shoots from the fifth eye were taken from 3 to 4-year-old branches of 8-year-old Malengra Seedling, Sweet Black, and Shasla Seedling grape vines. On 30 spurs the laterals were removed as soon as they appeared; on the rest, they were pinched off above the sixth leaf. At the end of the vegetative period, all the experimental shoots were detached and the fifth, tenth, fifteenth, and twentieth eyes hibernating were examined to determine the length of the embryonal shoot of the central bud and the number of formed nodes and embryonic inflorescences on it. On the spurs from which the laterals were not removed, the central buds of all the hibernating eyes developed significantly better towards autumn than the ones with the laterals removed. The productivity of the buds in the tenth to the fifteenth eyes was raised. In the central buds of the 15th eyes with laterals, the embryonic inflorescences increased in number and were denser and more differential. No decrease in growth nor deterioration in ripening of the main spurs was observed when the laterals were left. By pinching off the laterals, but leaving a definite number of leaves, productivity of the buds is increased.

ASTRONOMY

ABSTRACTS PERTAINING TO COMMUNIST CHINA IN SOVIET ABSTRACTS JOURNALS NO. 80 (ASTRONOMY AND GEOGRAPHY SERIES). 29 July 63, 4p. JPRS: 20361.
Order from OTS $0.50 63-31386

Trans. of selected abstracts from Referativnyi Zhurnal. Astronomiya [i Geodeziya] (USSR) 1963, no. 4 and Referativnyi Zhurnal. Geografiya (USSR) 1963, no. 4.

DESCRIPTORS: *Abstracts, *Astronomy, *Geography, *China, Astrophysics, Mapping.

Kondurar, V. T.
ON THE PRESENCE OF RESONANCE PHENOMENA IN THE MOTIONS OF A SATELLITE, RESULTING FROM ITS SHAPE AND THE FORM OF ITS ORBIT. Mar 63 [19]p. 4 refs.
Order from OTS or SLA $1.60 63-14729

Trans. of #Astronomicheskii Zhurnal (USSR) 1962, v. 39, no. 6, p. 1112-1123.

DESCRIPTORS: *Satellites, *Satellites, (Artificial), *Orbital trajectories, Orbital flight paths, *Celestial mechanics, *Motion, Resonance, Elliptical orbit trajectories, Geometric forms, Mathematical analysis.

This paper is a continuation of the study of the influence of the shape of a sputnik on its rotational motion around the center of mass and on the motion of the center of mass. Formulas for the computation of perturbations in the radius vector, longitude, applicate and precessional and nutational angles were obtained, assuming that the undisturbed orbit of the sputnik is a circle. In the present paper, the circular Keplerian motions of the center of mass are replaced by elliptical and the influence of the form of the undisturbed orbit on the motion of the sputnik is taken into account. It is assumed that the sputnik has an axial-symmetrical density distribution. Classical developments of celestial mechanics for polar coordinates of elliptical motion are used and differential equations with periodic coefficients of the Hill type solved. Thus new formulas are obtained for the above perturbations. The proposed new formulas can be applied for the study of the translational-rotational motion of celestial bodies (natural and artificial).

Kuprevich, N. F.
TELEVISION PHOTOGRAPHY OF THE MOON. 18 July 63, 9p. JPRS: 20223.
Order from OTS $0.50 63-31315

Trans. of Priroda (USSR) 1963 [v. 52] no. 4, p. 90-93.

DESCRIPTORS: *Infrared telescopes, Infrared photography, Television equipment, Iconoscopes, *Moon.

A semi-technical examination of the uses of infra-red vidicons in astronomy with emphasis on the results obtained through the use of these devices in moon photography.

Orlova, N. S.
PHOTOMETRICAL RELIEF OF THE LUNAR SURFACE [Fotometricheskii Rel'ef Lunnoi Poverkhnosti]. Mar 61 [13]p. 12 refs.
Order from OTS or SLA $1.60 62-10168

Trans. of Astronomicheskii Zhurnal (USSR) 1956, v. 33, no. 1 [p. 93-100].
Another trans. is available from OTS $1.60 as AD-264 169, STL-TR-61-5110-13, Mar 61, 14p. and from OTS $0.50 in 63-11639, NASA TT F-75, Sep 62, 17p.

DESCRIPTORS: *Brightness, *Moon, Measurement, *Optical analysis, Light, Reflection, Albedo (Astronomy), *Extraterrestrial geography, Terrain, Surface properties, Determination, Refractive index, Tables, Moon, Photometers.

Measurements of the brightness of the lunar surface and the absolute measurements of brightness were reduced. Supposing the surface of the continents and the surface of the seas as similar in all points of the lunar disk, average coefficients of brightness (brightness factor, albedo) were deduced for various combinations of the angles of incidence and reflection. Results related with the plane of incidence of the solar rays for seas and for continents are given. If the results are represented in the form of a polar diagram of reflectivity (diffusion function), then a group of curves is obtained, extremely extended in the direction to the sun at any angles of incidence of solar rays. Curves for the seas are similar to those for the continents. The similarity of the character of curves shows that the

unevenness of the lunar surface is extreme and is the same for the seas and the continents. Diffusion diagram of the moon exceeds considerably the investigated terrestrial samples according to their extension. The relation shows that the surface of the moon is covered with extremely porous matter, reminding slags of a spongy structure. (Author)

Starikova, G. A.
IRREGULAR VARIABLE RR TAURI. [1963] 2p. (figs. tables refs. omitted).
Order from OTS or SLA $1.10 63-14919

Trans. from Peremennye Zvezdy (USSR) 1951, v. 8, p. 244ff.

DESCRIPTORS: *Variable stars, *Stars, Optical properties, Brightness.

All published visual observations of RR Tauri, numbering 4200, were collected, and a combined curve for the variation of brightness from the years 1900 to 1942 was constructed. The purpose of this investigation was to determine certain relations and to compare them with the relations recently discovered for another irregular variable star, T Orionis, located in the great nebula of Orion. In the case of RR Tau no relation was discovered between the time interval separating two consecutive maxima and the amplitude of the following fluctuation; a very weak relation of this sort exists for T Ori. RR Tau shows many relations which are also shown by T Ori and these two stars are notably similar despite the difference in their absolute magnitudes and spectroscopic types. (Author)

Sytinskaya, N. N.
SUMMARY CATALOG OF THE ABSOLUTE VALUES OF THE VISUAL REFLECTING POWER AT FULL MOON OF 104 LUNAR OBJECTS [Svodnyi Katalog Absolyutnykh Znachenii Vizual'noi Otrazhatel'noi Sposobnosti 104 Lunnykh Ob''ektov]. May 61 [12]p. 5 refs.
Order from OTS or SLA $1.60 62-10149

Trans. of [Astronomicheskii Zhurnal] (USSR) 1953, v. 30, no. 3 [p. 295-301].
Another trans. is available from OTS $1.60 as AD-264 167, STL-TR-61-5110-24, May 61, 13p.

DESCRIPTORS: *Extraterrestrial geography, Tables, *Moon, Optical analysis, Terrain, Surface properties, Catalogs, *Brightness, Measurement, Light, Reflection, Determination.

Absolute values of the reflecting power of various details of the lunar disk, obtained by different observations and expressed in the form of the brightness factor, are reduced to a single standard system and presented as average values. The catalog of these values is used for some statistical comparisons. (Author)

SOVIET-BLOC RESEARCH IN GEOPHYSICS, ASTRONOMY, AND SPACE, NO. 63. 15 July 63, 43p. JPRS: 20197.
Order from OTS $16.00/year 61-11147-63
foreign $20.00/year

DESCRIPTORS: *Geophysics, *Astronomy, *Astronautics, *Upper atmosphere, *Space probes, *Astrophysics, *Meteorology, *Oceanology.

Consists of news items and abstracts of scientific articles on astronomy, meteorology, oceanography, terrestrial geophysics, upper atmosphere and space research, and other miscellaneous subjects.

Karimov, M. G., Zubtsov, A. S. and others.
PHOTOMETRY OF SOLAR FLARES (Fotometriya Solnechnykh Vspyshek). 17 Apr 63 [17]p. AID rept. T-63-49. AD-403 860.
Order from OTS or SLA $1.60 63-19354

Trans. of Akademiya Nauk Kazakhskoi SSR [Alma-Ata]. Astrofizicheskii Institut. Izvestiya, 1962, v. 14, p. 93-106.

DESCRIPTORS: *Solar flares, *Photometers, Spectrophotometers, Microphotometers, Photography, Light, Intensity, Photographic analysis, Optical analysis.

This study gives the results of the photometric processing of solar flares of importance ≥ 2, observed from October 1957 to the end of 1959, i.e., during the International Geophysical Year and the International Geophysical Cooperation. The observations were made at a high-mountain coronal station, 2600 m above sea level, in the region of Great Alma-Ata Lake, with the aid of the type-AFR-2 chromosphere-photosphere telescope. The motion picture was made in the H_α line with an interference-polarization filter having a pass-band width of 0.6 A. Standard 35-mm panchromatic high-sensitivity photographic film was used. The rate of filming was 2 frames a minute (sometimes 8 or 4). (Author)

Molchanov, A. P. and Korol'kov, D. V.
RADIO ASTRONOMY OBSERVATIONS OF THE SOLAR ECLIPSE OF FEBRUARY 15, 1961, CARRIED OUT BY THE MAIN ASTRONOMICAL OBSERVATORY (Radioastronomicheskie Nablyudeniya Solnechnogo Zatmeniya 15 Fevralya 1961 Goda, Vypolnennye Glavnoi Astronomicheskoi Observatoriei) tr. by P. A. Kazakov. [1962] [7]p. (foreign text included) 7 refs. [CSIRO Trans] 6075.
Order from OTS or SLA $1.10 63-13601

Trans. of Solnechnye Dannye (USSR) 1961, no. 4, p. 62-64.

DESCRIPTORS: *Radio astronomy, *Solar eclipses, *Astronomy, Solar spectrum, Sun, Astronomical observatories.

Quantities measured and observed were: (1) the total

flux, (2) the circularly polarized component, (3) the displacement of the centre of gravity, (4) the second harmonic of scanning (ellipticity, and (5) the determination of the size of localized sources of emissions. Some of the results obtained were: (1) the dimensions of the source associated with group no. 41 in the 3-10 cm wavelength range are significantly smaller than those at a wavelength of 21 cm at which its size is about 3.'5; (2) the flux measurements at wavelengths 2 to 4.9 cm were found to be roughly 2-4%, and at wavelengths 8.7 to 21 cm to be 10-12%; and (3) the brightness temperature from preliminary data, 3.10^{60}K (at 8.7 and 9.2 cm). All of the above results are associated with group no. 41. The results obtained confirm the expediency of the radio astronomy observation of eclipses over a wide range of wavelengths and with a broadened program of investigations.

Rabinovich, Yu. I.
ON THE ATTENUATION OF SOLAR RADIATION IN THE UPPER LAYERS OF THE TROPOSPHERE (Ob Oslablenii Solnechnoi Radiatsii v Verkhnikh Sloyakh Troposfery). 20 May 63 [6]p. 6 refs. AID Rept. T-63-75.
Order from OTS or SLA $1.10 63-19694

Trans. of Glavnaya Geofizicheskaya Observatoriya, Leningrad. Trudy (USSR) 1962, no. 125[187] p. 54-57.

DESCRIPTORS: *Aerosols, *Attenuation, *Solar radiation, Troposphere, Atmosphere, Optical properties, Measurement, Astrophysics.

The aerosol attenuation coefficient of direct radiation at an altitude of 3-5 km is practically equal to zero. At the same time, the aerosol optical thickness of the atmosphere above 6 km (τ_∞) attains a considerable magnitude. This article presents experimental values of τ_∞ and discusses their dependence on wavelength and the atmospheric conditions. (Author)

Stepanov, V. E.
THE MOTION OF Ca^+ IN CHROMOSPHERE AND THE CONNECTION OF THE MOTION WITH MAGNETIC FIELDS. [1963] [52]p. 22 refs.
Order from OTS or SLA $5.60 63-16438

Trans. from [Akademiya Nauk SSSR. Krymskaya Astrofizicheskaya Observatoriya. Izvestiya] 1960, v. 23 [p. 184-211].

DESCRIPTORS: *Calcium, Ionization, Motion, *Solar atmosphere, *Magnetic fields, *Gases, Velocity, Magnetometers, Measurement.

The magnetograph and recorder of radial velocities of the Crimean Astrophysical Observatory were used for measuring the longitudinal magnetic field in line Fc λ 5250 Å and radial velocities and brightness in H_3 Ca^+. The radial velocity field above active solar regions in flocculi and in undisturbed chromospheric regions was investigated. The radial velocities were compared with the magnetic field distribution at the photospheric level. (Author)

Stepanov, V. E.
ON MOTIONS AT VARIOUS LEVELS IN THE SUN'S "ATMOSPHERE" (K Voprosu o Dvizhenii na Razlichnykh Urovnyakh Atmosfery Solntsa) tr. by V. E. Solodukhin. [1963] [36]p. (foreign text included) 27 refs. CSIRO Trans. no. 6010.
Order from OTS or SLA $3.60 63-19147

Trans. of Akademiya Nauk SSSR. Krymskaya Astrofizicheskaya Observatoriya. Izvestiya, 1961, v. 25, p. 154-173.

DESCRIPTORS: *Sun, *Gases, Sunspots, Motion, Velocity, Turbulence, Astrophysics, *Solar atmosphere.

BEHAVIORAL SCIENCES

Volynkin, Yu. and Denison, V.
PSYCHOLOGY AND ASTRONAUTICS. 15 July 63, 15p. JPRS: 20171.
Order from OTS $0.50 63-31285

Trans. of Meditsinskaya Gazeta (USSR) 1963 [v. 26] 18 June, p. 2ff.

DESCRIPTORS: *Spacecraft, Spacecraft cabins, *Stress (Psychology), Closed-cycle ecological systems, Astronauts, Training, Psychology.

BIOLOGICAL SCIENCES

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 235 (BIOLOGY AND MEDICINE SERIES). 8 July 63, 5p. JPRS: 20062.
Order from OTS $0.50 63-31227

Abstract trans. of Polska Akademia Nauk. Bulletin: Serie des Sciences Biologiques, 1963, v. 11, no. 4, p. 161-167, 169-189, 191-197, 199-203.

DESCRIPTORS: *Abstracts, Bibliographies, *Biology, *Medicine, Alkaloids, Actinium, Caleoptera, Nematodes Insects, Fruit, Conditioned reflex.

ABSTRACTS PERTAINING TO COMMUNIST CHINA IN SOVIET ABSTRACTS JOURNALS NO. 82 (BIOLOGY SERIES). 31 July 63, 22p. JPRS: 20442.
Order from OTS $0.75 63-31428

Trans. of selected abstracts from Referativnyi Zhurnal. Biologiya (USSR) 1962, no. 13-14, and 1963, no. 1.

DESCRIPTORS: *Abstracts, Bibliographies, *Biology, China, Plants (Botany), Soils, Fruits, Fertilizers, Parasites, Sheep, Carcinogenic agents, Radiation effects, Embryos, Algae, Rice, Hormones, Chickens, Cells (Biology), Fishes, Aquatic animals, Spinal cord, Heart, Medicine, Age.

DOKLADY, BIOLOGICAL SCIENCES SECTIONS (DOKLADY AKADEMII NAUK SSSR) 1957-61, VOLS. 112-141 AND INDEX VOLS. 112-117. 1957-June 62, 31 nos.
Order from OTS or SLA

Partial trans. (Biological Sciences sections) of Akademiya Nauk SSSR. Doklady, 1957-61, v. 112-141.

DESCRIPTORS: *Biology, Animals, Morphology, Biophysics, Cells (Biology), Ecology, Embryos, Evolution, Genetics, Histology, Marine biology, Microorganisms, Parasites, Physiology.

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v. 140, 218p. $14.50, 63-23426-140
v. 141, 217p. $14.50, 63-23426-141

USSR SCIENTIFIC ABSTRACTS: BIOLOGY AND MEDICINE NO. 2. 16 July 63, 138p. JPRS: 20180.
Order from OTS $2.75 63-31290

Consists of abstracts of articles from USSR scientific and technical journals.

DESCRIPTORS: *Abstracts, Bibliographies, *Biology, *Medicine, *Space medicine, *Medical research, *Radiation effects, *Pharmacology.

Contents:
Aerospace medicine
Biological research
Medical research
Nuclear medicine
Pharmacology and toxicology
Miscellaneous

Mikhal'chenko, V. and Tsikora, S.
BIOTICS FORM THE MAGNETIC TAPE RECORDER. 6 Feb 63 [7]p. FTD-TT-62-1777. AD-400 513
Order from OTS or SLA $1.10 63-19305

Unedited rough draft trans. from Izvestiya (USSR) 1962, 25 Mar, p. 4.

DESCRIPTORS: *Bionics, *Cybernetics, Magnetic tape, Recording systems, *Magnetic recording systems.

An account of a bioelectrostimulator, which offers the possibility of controlling the functioning of individual nerve-muscular systems and certain human organs.

Sisakyan, N.
LIFE IN OUTER SPACE. 15 July 63, 13p. JPRS: 20168.
Order from OTS $0.50 63-31283

Trans. from Pravda [Moscow] (USSR) 1963, 21 June, p. 2 and 6.

DESCRIPTORS: *Space biology, *Space environmental conditions, *Closed-cycle ecological systems, Space flight, Space medicine, *Exobiology.

Anatomy and Physiology

LIFE SUPPORT SYSTEMS. A. BIOSCIENCES: SOVIET LITERATURE. Rept. 14 on AID Work Assignment 22. 6 June 63 [26]p. 9 refs. AID Rept. P-63-80.
Order from OTS or SLA $2.60 63-23151

DESCRIPTORS: *Life support, *Space medicine, Radiobiology, *Radiation effects, *Radioprotective agents, Drugs, Space biology, Literature, Cooling, Physiology.

Contents:
Space medicine and biology
Space physiology.

Ado, A. D. and others.
THE ALLERGIC REACTION OF SKELETAL MUSCLE (Allergicheskaya Reaktsiya Skeletnoi Myshtsy). Apr 63 [24]p. 21 refs. RTS-2220.
Order from OTS or SLA $2.60 63-15966

Trans. of Fiziologicheskii Zhurnal SSSR, 1946, v. 32, no. 1, p. 76-88.

DESCRIPTORS: *Muscles, Skeleton, Drugs, Proteins, Chemoreceptors, Contraction, Antigens, Tongue, *Acetylcholines, *Allergy, Psysostigmine.

Denervated canine tongue muscle was sensitized to exogenous acetylcholine by injections of horse serum. In about half the experiments, the denervated muscle contracted. Similar results were obtained on the tonic muscles of birds which were sensitized to protein but not denervated. Evidence was obtained of the local origin of the anaphylactic contraction: after a second injection of protein given 30 minutes after the first, the blood pressure did not fall, but the tongue muscle remained sensitive to the antigen and contraction occurred in the absence of any general reaction. To study the localization of the effect within the muscle, the tibialis anterior muscle of the dog and the gastrocnemius muscle of the goose and chicken were used. Intra-arterial injection of the sensitized animals with protein caused a contraction just as consistent as that obtained on muscles with an intact vascular innervation. All cholinomimetic and sympathomimetic drugs, and substances which paralyze the receptor apparatus elicited a contraction in sensitized animals when injected into an artery, but all were less potent than acetylcholine. In dog muscle, eserine was most effective; in avian muscles, protein; in chickens, eserine and protein were equally effective; and in geese, eserine had the same effect as atropine or pilocarpine.

Bychkov, S. M.
NEW DATA ON HUMAN GROUP-SPECIFIC MUCOIDS. [1963] [45]p. 45 refs. FASEB manuscript no. S 108-3.
Order from OTS or SLA $4.60 63-23049

Trans. of Voprosy Meditsinskoi Khimii (USSR) 1962, v. 8, no. 4, p. 339-353.

DESCRIPTORS: *Body fluids, Biochemistry, Genetics, *Mucopolysaccharides, *Glycoproteins, Secretions, *Antigen-antibody reactions.

Dautrebande, L.
EXPERIMENTAL PNEUMOCONSTRICTION AND PNEUMODILATATION. [1962] 20p.
Order from SLA $1.60 63-16998

Trans. of Revue Médicale de Nancy (France) 1957 [v. 82] July [p. 743-755].
Another trans. is available from K-H $25.00 as K-H 6871-a [1962] 20p.

DESCRIPTORS: *Respiratory system, *Dilation, *Constriction.

It is shown that not only the cholinergic substances but also dusts are pneumoconstrictive agents. Orthosympathicomimetic pneumodilatant agents are capable of neutralizing not only the action of parasympathicomimetic constrictive pharmacological substances but also of dusts. When administered prophylactically, they are capable of preventing the appearance of the constriction produced by the dusts as well as by the drugs. (Author)

Gusel'nikov, V. I. and Polyanskii, V. B.
THE RHYTHM-REORGANIZING REACTION IN VARIOUS AREAS OF A PIGEON BRAIN IN RESPONSE TO DOUBLE RHYTHMIC PHOTIC STIMULATION. [1962] [7]p. 13 refs.
Order from OTS or SLA $1.10 63-19038

Trans. of Nauchnye Doklady Vysshei Shkoly. Biologicheskie Nauki (USSR) 1962, no. 1, p. 83-87.

DESCRIPTORS: *Brain, Stimulation, Light, *Pigeons, Photoreceptors, Electrodes, *Electroencephalography, Rhythm.

Electrodes were inserted into the "frontal" area of the forebrain hemispheres, the tectum opticum of the midbrain, and into the reticular formation of the medulla oblongata of pigeons. Rhythmic photo stimuli were set up 10 cm from the eye at the same level and at approximately the same angle with the axis of the eye. Two frequencies of photic stimulation not multiples of each other were impressed on one eye on the opposite side of the head from the area of the brain under study. In the tectum opticum, the higher frequency predominated. In the reticular formation when the two non-multiple frequencies were in the 1 to 15 per second range, the lower frequency predominated. Investigations showed that increasing the intensity of one of the superposed frequencies results in an increase in the amplitude of that frequency. The amplitude of the other frequency then drops considerably (inhibition). This phenonmenon occurred in all the areas of the pigeon brain which were explored. Continued application of the stimulus causes inhibition of the facilitating effect (orienting reflex). This effect disappears most rapidly in the hemispheres of the forebrain, then in the reticular formation of the medulla oblongata, and lastly in the tectum opticum of the midbrain.

Korostovtseva, N. V.
THE ACCLIMATIZATION PROGRAM AND SOME INDICES OF ACCLIMATIZATION OF RATS TO DEEP ANOXIC-HYPERCAPNIC HYPOTHERMIA. [1963] [11]p. 2 refs. FASEB manuscript no. S 29-3.
Order from OTS or SLA $1.60 63-23057

Trans. of Fiziologicheskii Zhurnal SSSR, 1962, v. 48, no. 12, p. 1466-1471.

DESCRIPTORS: *Acclimatization, Adaptation (Physiology), Rats, *Hypoxia, *Hypothermia, Ecology, *Hypercapnia, Oxygen consumption, Tolerances (Physiology).

The choice of an acclimatization program for rats to deep anoxic-hypercapnic hypothermia is made difficult by the considerable individual variations in metabolism; the best results are obtained by three periods of acclimatization on alternate days. The resistance of rats to hypothermia rises along with the intensity of their metabolism (an increase in the O_2 consumption and changes in their temperature reaction to a cold environment) and is accompanied by a decrease in their sensitivity to anoxia. The O_2 consumption and changes in the body temperature in response to a cold environment, and also the sensitivity of the organism to oxygen lack, may be interpreted as indirect indices of the preparedness of the rats to undergo exposure to deep artificial hypothermia. (Author)

Lapteva, N. N., Gurdzhiev, R. A. and others.
PREPARATIVE FRACTIONATION OF BLOD-SERUM PROTEINS BY CONTINUOUS ELECTROPHORESIS IN THE EFP-" APPARATUS. [1963] 7p.
Order from ATS $9.75 ATS-31Q70R

Trans. of Voprosy Med[itsinskoi] Khim[ii] (USSR) 1963, v. 9, no. 1, p. 84-89.

DESCRIPTORS: Blood serum, *Blood proteins, Electrophoresis, *Medical equipment.

Mateev, Dragomir.
PROBLEMS IN THE BATTLE FOR LONGEVITY. 28 June 63, 13p. JPRS: 19946.
Order from OTS $0.50 63-31164

Trans. of Narodna Prosveta (Bulgaria) 1963 [v. 19] no. 4, p. 71-80.

DESCRIPTORS: *Age, *Exercise, Physical fitness, Metabolism.

Ptokhov, M. P.
ENDOTHELIUM OF THE CARDIAC VALVES IN THE CAT, DOG, AND MONKEY. [1963] [11]p. 11 refs. FASEB manuscript no. S 193-2.
Order from OTS or SLA $1.60 63-23048

Trans. of Arkhiv Anatomii, Gistologii i Embriologii (USSR) 1962, v. 42, no. 5, p. 29-34.

DESCRIPTORS: *Epithelium, *Heart, Cats, Dogs, Primates, Tissues (Biology), Cells (Biology), Regeneration.

The valvular endothelium of every subject examined showed small-celled islets with a large number of amitoses. The fact that the small-celled islets and numerous amitotically dividing nuclei and cells are constantly present in the endothelium of the cardiac valves indicates high physiological regeneration potentialities, very likely directly related to the specific local conditions. Evidently, amitosis in a case of this type provides for more rapid replacement of the shed cells and maintains the integrity of the endothelial covering. (Author)

Sokolov, V. B.
THE FUNCTIONAL IMPORTANCE OF THE NERVES OF THE LIGAMENTA DENTICULATA OF THE SPINAL CORD. [1963] [18]p. 15 refs. FASEB manuscript no. S 198-2
Order from OTS or SLA $1.60 63-23046

Trans. of Arkhiv Anatomii, Gistologii i Embriologii (USSR) 1962, v. 43, no. 8, p. 35-42.

DESCRIPTORS: Physiology, *Nerves, *Spinal cord, Morphology, *Autonomic nervous system, Histology.

The comparison of the morphological findings with the results of the experimental physiological study of the functional importance of the nerves of the ligamenta denticulata of the spinal cord shows that these ligaments form one of the ways by which preganglionic sympathetic fibers leave the spinal cord for the periphery. After passing through the "teeth" of the ligamentum into the dura mater, these nerve fibers proceed in the substance of the epidural nerve trunks into the white rami communicantes and, later, into the sympathetic trunk. From this aspect, these fibers in the ligamenta denticulata are a form of lateral sympathetic root of the spinal cord. Morphologically, they are very thin medullated fibers, 1-2 μ in diameter, which in our preparations examined under the microscope were arranged in large numbers between the bundles constituting the connective-tissue stroma of the ligamenta denticulata of the spinal cord. (Author)

Starkov, P. M. and Aganyants, E. K.
RESTITUTION OF THE ELECTROENCEPHALOGRAM AFTER HYPOTHERMIA. 18 Feb 63 [17]p. 24 refs. FTD-TT-62-1904; AD-298 659.
Order from OTS or SLA $1.60 63-19091

Unedited rough draft trans. of #Fiziologicheskii Zhurnal SSSR, 1962, v. 48, no. 6, p. 629-637. Another trans. is available from OTS or SLA $1.60 as 63-19010, FASEB-S-240-2 [1962] [20]p.

DESCRIPTORS: *Electroencephalography, *Hypothermia, *Body temperature, Bioelectronics, Rhythm, Cerebral cortex.

For abstract see Technical Translations 9: 982, 1963.

Sviridov, A. I.
FUNCTIONAL MORPHOLOGY OF THE PERIVASCULAR LYMPHATICS IN THE VERTEBRATES. [1963] [11]p. 12 refs. FASEB manuscript no. S 194-2.
Order from OTS or SLA $1.60 63-23047

Trans. of Arkhiv Anatomii, Gistologii i Embriologii (USSR) 1962, v. 42, no. 5, p. 83-88.

DESCRIPTORS: Physiology, Morphology, *Lymph, *Lymphatic system, *Blood circulation, Animals, Histology.

Perivascular lymphatics in the vertebrates show no definite organ localization. Their presence in various organs is not associated with animal taxonomic groups but is a result of particular anatomical relationships obtaining locally. Perivascular lymphatics are found in sites where the serous or mucous membranes containing the primary lymph plexuses are only loosely attached to the muscular tissue and where the perilymphatic connective tissue of the parenchyma is poor in or deprived of elastic fibers (motor elements) or spiral collagen fibers. The perivascular lymphatics are thus a morphological expression of functional adaptation of only weakly contractile lymph vessels to the motor function of the blood vessels. As a result the centripetal flow of lymph, in the former, is maintained by the pulsation of the latter. (Author)

Zbarskii, I. B.
THE ORGANIZATION OF NUCLEIC ACIDS IN THE CELL (Organizatsiya Nukleinovykh Kislot v Kletke). [1963] [30]p. 61 refs. FASEB manuscript no. S 81-3.
Order from OTS or SLA $2.60 63-23051

Trans. of Akademiya Meditsinskikh Nauk SSSR. Vestnik. 1962, v. 17, no. 12, p. 3-13.
Another trans. is available from OTS or SLA $2.25 in 63-21143, JPRS-17667, 15 Feb 63, 93p.

DESCRIPTORS: *Nucleic acids, *Cells (Biology), Biochemistry.

Biochemistry

DESOXYRIBONUCLEIC ACID. [1961] 2p.
Order from SLA $1.10 63-16917

Trans. of Revue Generale des Sciences Pures et Appliquées (France) 1959, v. 66, p. 39
Another trans. is available from K-H $1.25 as K-H 9613 [1961] 1p.

DESCRIPTORS: *Nucleic acids, Desoxyribonucleic acid.

PHOSPHATASES AND SULFATASES: PHYTASE. [1963] 4p. (figs. formulae omitted) 18 refs.
Order from SLA $1.10 63-16282

Trans. of German mono. The Hydrolysing Enzymes of Esters, Esterases, n.p., n.d., chap. 3, sec. C, p. 101-103.

DESCRIPTORS: *Phosphoric monoester hydrolases, Enzymes, Esters, Analysis.

Afar, Ya. M. and Rogozkin, V. A.
THE EFFECT OF CASEIN HYDROLYZATE ON CARBOHYDRATE—PHOSPHORUS METABOLISM DURING PROLONGED PHYSICAL EFFORT. [1962] [15]p. 9 refs. FASEB manuscript no. S 245-2.
Order from OTS or SLA $1.60 63-19012

Trans. of #Fiziologicheskii Zhurnal SSSR, 1962, v. 48, no. 6, p. 754-759.

DESCRIPTORS: *Casein, Carbohydrates, Phosphates, Adenosine phosphates, Phosphorus, *Metabolism, Exercise, *Muscles, Lactic acid, Glucose.

A commercial casein was hydrolyzed with 6N HCl for 12 hours. The resulting hydrolyzate contained 13.4% nitrogen or 85% of the nitrogen in casein, 0.28% phosphorus and all 18 amino acids in casein. Albino rats were made to swim in water at 30 to 32° for 5 hours during which hydrolyzate was given by mouth at hourly intervals. Analyses were made to determine the content of creatine phosphate (CP), inorganic phosphorus, lactic acid, adenosine triphosphate (ATP), adenosine diphosphate (ADP), and adenosine monophosphate (AMP) in the working muscles; and glucose in the blood and muscles. The ATP content was 31% higher, and the CP content was 26% higher than in animals not receiving protein hydrolyzate. The concentration of adenylic and lactic acids was slightly decreased. After the rats rested for 30 minutes after swimming, the level of high-energy P compounds was higher than in the control animals; the adenylic acid decreased by 40%; the ATP and CP increased by 27% and 72% respectively; but the changes in glucose content were statistically insignificant. Intensified phosphorylation was indicated. Administration of glucose had no appreciable effect on the metabolism. Glutamic acid caused no effect on the adenosine phosphate content in the muscles. A mixture of 16 amino acids produced the same metabolic effects as hydroyzate; the effects of phosphoric salts were similar.

Asmaev, P. G. and Mokhnachev, I. G.
CONTENT IN TOBACCO OF NON-CARBOHYDRATE CARBONYL SUBSTANCES. [1963] [9]p. 10 refs.
Order from OTS or SLA $1.10 61-20584

Trans. of [Tabak (USSR) 1960, v. 21, no. 3, p. 35-39].

DESCRIPTORS: *Tobacco, *Carbonyl radicals, *Fermentation, Amino acids, Temperature, Chemical analysis.

The investigation of the fermentation of tobacco at various temperatures from the point of view of the dynamics of change of the content of carbonyl substances on non-carbohydrate character showed that the accumulation of these substances is more pronounced during the fermentation at low temperatures (30° - 35° C) than during high temperature fermentation (50° - 70°C). (Author)

Decker, Karl, Gries, F. Arnold and Brühmüller, Margaret.
DECOMPOSITION OF NICOTINE BY BACTERIA ENZYMES. III. METABOLISM STUDIES ON CELL-FREE EXTRACTS. [1962, 26]p. 17 refs.
Order from SLA $2.60 63-16984

Trans. of Hoppe-Seyler's Z[eitschrift für] Physi[ologische] Chem[ie] (West Germany) 1961, v. 323, p. 249-263.
Another trans. is available from K-H $31.25 as K-H 11547-b [1962] 25p.

DESCRIPTORS: Decomposition, *Nicotine, *Bacteria, Enzymes, Metabolism, Bacterial extracts.

A soluble enzyme extract from Arthrobacter oxydans breaks down nicotine in 3 oxidative steps. The reaction conditions and cofactor requirements for this system were studied and an optical test for enzymic nicotine oxidation is given. A series of several intermediates has been detected by spectral changes during nicotine breakdown and by chromatography, especially with ^{14}C-labelled nicotine. These results and comparison with the breakdown of structurally related alkaloids give an indication as to the probable reaction sequence. (Author) (See also 63-16889)

Decker, K., Eberwein, H. and others.
ON THE DEGRADATION OF NICOTINE BY BACTERIAL ENZYMES. IV. L-6-HYDROXY-NICOTINE AS THE FIRST INTERMEDIATE. [1962] 31p. 27 refs.
Order from SLA $3.60 63-16952

Trans. of Biochemische Zeitschrift (West Germany) 1961, v. 334, p. 227-244.
Another trans. is available from K-H $38.75 as K-H 11325 [1962] 31p.

DESCRIPTORS: *Nicotine, *Bacteria, *Enzymes, Hydroxides.

By means of cell-free extracts of Arthrobacter oxydans. L-nicotine is converted into 6-hydroxy-nicotine by dehydrogenation. The same enzyme, which was considerably enriched, also hydroxylates D-nicotine in the presence of artificial electron acceptors. After the biological separation of the enantiomorphs it was possible to bring proof for the fact that L-6-hydroxynicotine is formed exclusively from L-nicotine. The mechanism of this process is discussed. L-6-hydroxy-nicotine satisfies the requirements of a physiological intermediate in the L-nicotine degradation by A. oxydans. (Author)

Friedrich, Hilda.
PROCESS FOR MAINTAINING THE MOISTURE IN DIFFICULTY WETTABLE TOBACCOS, PARTICULARLY ORIENTAL TOBACCOS, BY MEANS OF BIVALENT ALCOHOLS. [1962] 4p.
Order from OTS or SLA $1.10 63-16671

Trans. of German patent 1,056,990, F 24971 IVa/79, cl. 79 c 1, internat. cl. A 24 b, by Farbwerke Höchst Aktiengesellschaft formerly Meister Lucius und Bruning, appl. 4 Feb 58, pub. 6 May 59.
Another trans. is available from K-H $5.00 as K-H-10920-b 1962.

DESCRIPTORS: *Tobacco, Moisture, *Alcohols, Wetting agents.

The invention involves a process for maintaining the moisture of difficultly wettable tobaccos, particularly oriental tobaccos, by means of bivalent alcohols characterized by the fact that the crude tobacco is adjusted to a water content of at least 14 to 18% at suitable temperature and atmospheric humidity before the addition of the bivalent alcohols. The adjustment is carried out at a temperature of 20 to 30°C and at a relative humidity of 70 to 90%. Process according to Claim 1 or 2 characterized by the fact that The tobaccos are stored at a relatively humidity of about 80%. Ethylene glycols, 1, 3-butylene glycol, 1, 2-propylene glycol, polyglycols and/or mixtures of the same are incorporated as humectants in the wetted tobacco. Sorbic acid as a preservative is incorporated in the tobacco in addition to the humectants. (Author)

Jong, H. G. Bungenberg de and Kaas, A. J. W.
[STUDIES ON] COMPLEX COACERVATION. V RELATIVE DISPLACEMENT IN A DIRECT-CURRENT FIELD OF LIQUID INCLUSION IN COMPLEX COACERVATE DROPLETS. [1963] 6p. (figs. 1 table omitted) 4 refs.
Order from SLA $1.10 63-16536

Trans. of Biochemische Z[eitschrift] (Germany) 1931, v. 232, p. 338-345.

DESCRIPTORS: *Colloids, Drops, *Electrophoresis, Electric fields, Direct current, Hydrogen ion concentration, *Membranes, *Morphology.

(See also 63-16535)

Karyakin, A. V. and Chibisov, A. K.
SPECTRAL INVESTIGATIONS OF THE STATE OF WATER IN CHLOROPHYLL (Spektral'nye Issledovaniya Sostoyaniya Vody v Khlorofille) tr. by Lydia Venters. Feb 63 [8]p. 11 refs.
Order from OTS or SLA $1.10 AEC-tr-5662

Trans. of #Biofizika (USSR) 1962, v. 7, no. 5, p. 561[-567].
Another trans. is available from OTS or SLA $1.10 as 63-16722 [1963] [7]p.

DESCRIPTORS: *Plant pigments, *Chlorophylls, Films, Spectra (Infrared), Spectra (Visible and ultraviolet), Absorption spectrum, Luminescence, Water, Chemical bonds, Tracer studies, Deuterium oxide, *Cyclopentanes.

Infrared absorption spectra of solid films and solutions of chlorophylls, absorption spectra in the visible region, as well as fluorescence spectra of the solutions of pigments were investigated. It was found that water bound in the chlorophyll a and b has different bond stability and correspondingly different rates of the isotopic exchange for D_2O. It was supposed that oxygen atoms of the cyclopentane ring are the interaction place between chlorophyll a and water. It was shown that water bound by pigments has a remarkable effect on the electron absorption and emission spectra of chlorophylls. (Author)

Lundmark, E.
QUANTITATIVE DETERMINATION AND ISOLATION OF GLUTAMIC ACID FROM PROTEIN HYDROLYZATES AS ZINC SALT [Über Quantitative Bestimmung und isolierung der Glutaminsäure als Zinksalz aus Eiweisshydrolysaten]. [1963] 3p.
Order from SLA $1.10 63-14582

Trans. of Suomen Kemislehti (Finland) 1945, v. 18B [no. 1/2] p. 6.

DESCRIPTORS: Quantitative analysis, *Glutamic acid, Hydrolysis, *Proteins, *Zinc compounds, Salts, Chemical precipitation.

Man'kovskaya, N. K. and Getmanskaya, Z. I.
ISO ACIDS AS COMPONENTS OF COMMERCIAL SYNTHETIC FATTY ACIDS. [1963] 8p.
Order from ATS $9.50 ATS-70Q69R

Trans. of Maslob[oino]-Zhir[ovaya] Prom[yshlennost'] (USSR) 1962, v. 28, no. 1, p. 16-21.

DESCRIPTORS: *Fatty acids, Industrial production, Acids, Molecular isomerism.

Sakurai, S. and Akabori, J.
GLUTAMIC ACID PRODUCTION BY USE OF TRANSAMINASE. [1963] 2p.
Order from OTS or SLA $1.10 63-16098

Trans. of Japanese [published] patent specification 3768/56, filing date 16 Mar 54, pub. 23 May 56, assignee: Ajinomoto Ltd.

DESCRIPTORS: *Glutamic acid, *Transaminases, Tissue extracts, Aspartic acid, Ammonium radicals.

The invention involves a process for glutamic acid production by use of transaminase characterized in that an aqueous extract of transaminase from animal tissue is added to a substrate of α-ketoglutaric acid and L-aspartic acid or DL-aspartic acid in concentrated aqueous solution, more particularly, said reaction solution containing at least 13.5% L-aspartic acid or at least 19.8% DL-aspartic acid, the transaminase extract being added in the proportion of 0.0010-0.0025 wt/% calculated for transaminase in respect of α-ketoglutaric acid, in that no buffering agent is added, in that the slightly alkaline solution is held at 37-40°C, and in that L-glutamic acid which is forming in high concentration is isolated in high yield and by simple steps from L-glutamic acid ammonium salt aqueous solutions. (Author)

Tamayo, Antonio Izquierdo, Alvarez, Alejandro Medeiros, and Galan, Rodrigo Cota.
BACTERIA IN THE FERMENTATION OF TOBACCO. [1962] 8p.
Order from SLA $1.10 63-16692

Trans. of mono. International Scientific Tobacco Congress (no. 2) Brussels, 8-15 June 58. [Proceedings] p. 682-690.
Another trans. is available from K-H $10.00 as K-H-10822 [1962].

DESCRIPTORS: *Bacteria, *Tobacco, *Fermentation, Moisture, Taste.

An experimental series of inoculation of pure cultures of bacteria into tobacco demonstrated that they multiply there when it is subjected to the suitable temperature and humidity. The micrococci are remarkable for their multiplication, especially the M. aurantiacus. The aroma and the characteristics of the inoculated tobaccos are improved, especially in the case of those which received micrococci and even more than those which were moistened with culture-mixtures of Bacillus and Micrococcus. In the tobacco inoculated with micrococci the percentage of protein nitrogen decreases while that of soluble nitrogen, particularly in the form of NH_3, amines and amides, increases, which is a particularly interesting fact, for in the fermentation of alkaline tobaccos as complete a proteolysis as possible should be produced. The alkaloids (especially nicotine) decrease in the course of the fermentation, especially in the tobacco moistened with micrococci. There is also a rise of pH in the fermented tobacco, particularly in that which is inoculated with micrococci. Tobaccos moistened with cultures of bacteria have a higher percentage of moisture than those moistened with water or with a tobacco infusion. (Author)

Ulmann, M.
DETERMINATION OF THE CHEMICAL NATURE OF THE SHELL OF A SWELLED STARCH GRANULE. [1963] 16p. 30 refs.
Order from SLA $1.60 63-16482

Trans. of Kolloid Zeitschrift (West Germany) 1957, v. 150, no. 2, p. 128-134.

DESCRIPTORS: *Starches, *Amylose, *Pectins, Chemical analysis, Separation, Sodium compounds, Salicylic acids, Solvents.

In the separation of the starch constituents with sodium salicylate solutions into a "shell substance" insoluble in this solution, and the "starch substance" which is soluble therein, the constituents are amylopectin and amylose, as was proved with a chromatographic investigation using a Al_2O_3- column. In several instances a third starch component making up the chemical constituents of starch has been presumed to exist. This is not true. The native starch granule has no special shell. During tangential swelling of the starch granule, the amylopectin structure of the native starch granule is compressed and a shell is formed. When starch is subjected to acid treatment, what happe happens is not disintegration of the hypothetical "shell" of the granule, but dissolving of the amylose and amylopectin portions. At the same time, the total structure is loosened by disintegration of larger amylopectin aggregates to the extent that the starch granule as such becomes more soluble. The result of temperature increase does not cause destruction of the hypothetical "shell", but damage of the amylopectin frame of the total starch granule. (Author)

Wang, Te-pao and Meng, Wei-lien.
NUCLEIC ACIDS AND BIOSYNTHESIS OF PROTEINS. 19 July 63, 6p. JPRS: 20255.
Order from OTS $0.50 63-31332

Trans. of K'o Hsüeh T'ung Pao (Chinese People's Republic) 1960, no. 4, p. 117-118.

DESCRIPTORS: *Nucleic acids, *Proteins, *Amino acids, Biosynthesis, Desoxyribonucleic acids.

Wohl, A.
CARBOHYDRATES, I. [1963] 43p. 21 refs.
Order from SLA $4.60 63-14085

Trans. of [Chemische] Ber[ichte] (Germany) 1890, v. 23, p. 2084-2110.

DESCRIPTORS: *Carbohydrates, Hydrochloric acid, Polarization, *Stereochemistry, *Glucose, *Fructose, Saccharides, *Starches, *Dextrins, Synthesis (Chemistry), *Inulin.

Yuki, Hiraaki.
SYNTHESIS OF POLYPEPTIDE CONSISTING OF DL-GLUTAMIC ACID, DL-LYSINE AND DL-PHENYLALAMINE. Rept. no. 1 of Synthetic Bipolar Polypeptide. [1963] 12p. (figs. tables omitted) 13 refs.
Order from SLA $1.60 63-16206

Trans. of Nihon Kagaky Zasshi (Japan) 1956, v. 77, no. 1, p. 44-47.

DESCRIPTORS: *Proteins, *Peptides, Synthesis (Chemistry), *Amino acids, *Glutamic acid, *Lysines, *Phenylalanines, Polymerization, Quantitative analysis, Carboxy-lyases, Chromatographic analysis, Electrolytic titration.

In order to obtain a substance similar to natural protein by adding neutral amino acid, together with glutamic acid and lysine and by further increasing the molecular weight, an effort was made to synthesize bipolar polypeptide at the molar ratio of the remaining radicals of DL-glutamic acid, DL-lysine and DL-phenylalamine at 1 : 1 : 3. (Author)

Botany

PLANT PHYSIOLOGY, 1957-61, VOLS. 4-8.
1957-June 62, 31 nos.
Order from OTS or SLA

Trans. of Fiziologiya Rastenii (USSR) 1957-61, v. 4-8.

DESCRIPTORS: *Plants (Botany), *Physiology.

v. 4, no. 1, 121p. $10.10, 63-23430-(4/1)
v. 4, no. 2, 114p. $9.60, 63-23430-(4/2)
v. 4, no. 3, 81p. $8.10, 63-23430-(4/3)
v. 4, no. 4, 82p. $8.10, 63-23430-(4/4)
v. 4, no. 5, 104p. $9.10, 63-23430-(4/5)
v. 4, no. 6, 101p. $9.10, 63-23430-(4/6)
v. 4, Index, 15p. $1.60, 63-23430-Index(4/7)
v. 5, no. 1, 101p. $9.10, 63-23430-(5/1)
v. 5, no. 2, 121p. $10.10, 63-23430-(5/2)
v. 5, no. 3, 103p. $9.10, 63-23430-(5/3)
v. 5, no. 4, 97p. $8.60, 63-23430-(5/4)
v. 5, no. 5, 104p. $9.10, 63-23430-(5/5)
v. 5, no. 6, 102p. $9.10, 63-23430-Index(5/6) (includes index)
v. 6, no. 1, 147p. $11.00, 63-23430-(6/1)
v. 6, no. 2, 140p. $10.50, 63-23430-(6/2)
v. 6, no. 3, 135p. $10.50, 63-23430-(6/3)
v. 6, no. 4, 137p. $10.50, 63-23430-(6/4)
v. 6, no. 5, 135p. $10.50, 63-23430-(6/5)
v. 6, no. 6, 129p. $10.10, 63-23430-Index(6/6) (includes index)
v. 7, no. 1, 111p. $9.60, 63-23430-(7/1)
v. 7, no. 2, 118p. $9.60, 63-23430-(7/2)
v. 7, no. 3, 110p. $9.10, 63-23430-(7/3)
v. 7, no. 4, 98p. $8.60, 63-23430-(7/4)
v. 7, no. 5, 112p. $9.60, 63-23430-(7/5)
v. 7, no. 6, 134p. $10.50, 63-23430-Index(7/6) (includes index)
v. 8, no. 1, 119p. $9.60, 63-23430-(8/1)
v. 8, no. 2, 100p. $8.60, 63-23430-(8/2)
v. 8, no. 3, 105p. $9.10, 63-23430-(8/3)
v. 8, no. 4, 116p. $9.60, 63-23430-(8/4)
v. 8, no. 5, 111p. $9.60, 63-23430-(8/5)
v. 8, no. 6, 104p. $9.10, 63-23430-Index(8/6) (includes index)

Alekperov, S. A.
THE EFFECT OF CONCENTRATED SALT SOLUTIONS ON THE PHYSIOLOGY OF SWELLING AND GERMINATION OF SEEDS OF SOME LIGNEOUS AND SCRUB PLANTS (Vliyanie Kontsentrirovannykh Rastvorov Solei na Fiziologiyu Nabukhaniya i Vskhozhest' Semyan Nekotorykh Drevesenykh i Kustarnikovykh Rastenii) tr. by W. Hall. [1962] [23]p. (foreign text included) 13 refs. [CSIRO] Trans. no. 6069.
Order from OTS or SLA $2.60 63-13239

Trans. of Akademiya Nauk Azerbaidzhanskoi SSR, Baku, Izvestiya. Seriya Biologicheskikh i Meditsinskikh Nauk, 1961, no. 1, p. 15-23.

DESCRIPTORS: Salts, Solutions, Physiology, Salinity, *Fertility, *Seeds, Plants (Botany), Growth, Soils, *Absorption (Physiology),

The effect of concentrated salt solutions on the swelling and germination of the seeds of oak, eldar pine, three-spined honey locust, and false indigo were used in these studies. The false indigo seeds were collected from plants growing on soils of variable salinity. Each type of seeds was soaked in various strengths of solutions of sodium sulphate, sodium chloride and van't Huff solution. After soaking, the seeds were dried on filter paper, weighed and left at room temperature. They were weighed after 1, 2, 3, 6, 11, 24 and 48 hours. The effect of salification on germination and shooting was determined by allowing the seeds to germinate at room temperatures in crystalizers on filter paper saturated with the various salt solutions. The following conclusions were drawn: (1) Sodium chloride and sodium phosphate have a harmful effect on the swelling of the seeds of the plants studied. (2) Seeds from the plants grown in soil with high saline content absorb more water than other seeds. (3) Salt solutions decrease the germination rate and shooting energies of seeds. (4) The harmful effects increased with an increase in salt concentration.

Bailey, I. W.
THE STRUCTURE OF THE PIT MEMBRANES IN THE TRACHEIDS OF CONIFERS (Die Struktur der Tupfelmembranen bei den Tracheiden der Koniferen). [1963] [9]p. 11 refs.
Order from SLA $1.10 63-16554

Trans. of Holz als Roh- und Werkstoff (West Germany) 1957, v. 15, no. 5, p. 210-213.
Another trans. is available from SLA as 58-750.

DESCRIPTORS: *Trees, *Wood, *Cells (Biology), *Membranes (Biology), Histology, Electron microscopy

The structure of the pit membranes of coniferous tracheids varies markedly, not only in different taxa, but also in different parts of the same tree, and at times in neighbouring tracheids of a small sample of wood. These ranges of structural variability deserve careful consideration in the interpretation of electron micrographs and in experimental investigations of the movement of gases, liquids and suspensions of solid particles through coniferous woods. (Author)

Boichuk, C. B.
THE DYNAMICS OF AUXINS IN GERMINATING TOMATO SEEDS (Dynamika Auksyniv u Propostayuchomu Nasinni Pomidoriv). Dec 62 [15]p. 12 refs. RTS-2182.
Order from OTS or SLA $1.60 63-15960

Trans. of Ukrayins'kyi Botanichnyi Zhurnal (USSR) 1960, v. 17, no. 5, p. 23-31.

DESCRIPTORS: Dynamics, *Growth substances, *Tomatoes, Fruits, *Seeds, Growth, Inhibition, Stimulation, Plants (Botany).

Two sets of tomato seeds were used to analyze their stimulator and inhibitor contents and to clarify the dynamics of different stages of their germination. The free growth substances were determined in one group in wet non-chromatographed ether extracts by the biological test using wheat coleoptiles. The quantity of free and bound auxins was determined in the second group by the biological appearance of chromotograms in a similar test. The seeds were spread on wet filter paper and germinated in an incubator. Samples were taken at varying intervals of from 12 to 96 hours and from dry seeds. The relative quantity of free auxins in both experiments varied according to the germination stage. The quantity of free and bound auxins in dry tomato seed was exceptionally low. The inhibitor content was higher in dry seeds than in all germination stages. Free auxins increased after the first 12 hours of germination. Bound auxins increased after 24 hours of germination. These experiments indicate that inhibitors are either partly or completely convertible into stimulators. The author states that this data is insufficient to reach conclusions as to the physiological importance of the individual stimulators in germinating seed, but that it can be assumed that beta-indole acetic acid or a substance close to it does not occupy a leading position in the complex of these substances.

Golodrigo, P. Ya.
SEX DETERMINATION IN THE VINE ACCORDING TO CERTAIN BIOCHEMICAL CHARACTERISTICS (Opredelenie Pola Rastenii Vinograda po Nekotorym Biokhimicheskim Pokazatelyam). 1963, 5p. PL-480 Agr.
Order from OTS $0.50 63-11038

Trans. of Agrobiologiya (USSR) 1960, no. 3, p. 402-405.

DESCRIPTORS: *Sex, *Plants (Botany), Biochemistry, Enzymes, *Peroxidase, *Oxidoreductases.

The enzymatic activity of different vine varieties varies, and depends on the developmental stage. In the vast majority of varieties with flowers of the female type, peroxidase and polyphenol oxidase activity, as well as ascorbic acid content, are considerably higher than those in varieties having monoecious or functionally male types of flowers. (Author)

Paech [Karl].
METABOLISM OF ORG[ANIC] COMP[OUNDS] II [Stoffwechsel Organischer Verbindungen, II]. [1962] 44p.
Order from K-H $55.00 K-H 3902 e

Trans. of Fortschritte der Botanik (West Germany) [1952] v. 15, p. 313-347.

DESCRIPTORS: *Metabolism, *Organic compounds.

Veselov, I. Ya. and Shil', V. N.
VARIATION OF THE BIBIOLOGICAL FUNCTIONS OF YEAST UNDER THE INFLUENCE OF PROLONGED DE-AERATION AND CARBONIC ACID DURING FERMENTATION (Ob Izmenchivosti Biologicheskikh Funktsii Drozhzhei pod Vliyaniem Dlitel'nogo Vozdeistviya Deaeratsii i Uglekisloty pri Brozhenii) tr. by B. H. McConkey. [1962] [13]p. (foreign text included) 7 refs. [CSIRO] Trans. 5796.
Order from OTS or SLA $1.60 63-13607

Trans. of mono. Trudy Konferentsii Posvyashchennoi 40-Letiyu Velikoi Oktyabr'skoi Sotsialisticheskoi Revolyutsii, 8-14 Okt 57, v. 1, Moscow, 1959, p. 371-375.

DESCRIPTORS: *Yeasts, Fungi, *Anaerobiology, Carbonic acids, *Fermentation, *Reproduction, Beer.

Brewing yeast was bred in 11% beer wort which had been de-aerated and saturated with CO_2. The yeast was fed by the planted medium for the next replanting. Tests were made on brewing yeast during large-scale planting (not over 20 million/ml) at 8°. In the first stages repro duction decreased. From the beginning of the sixth generation to the 10th, the final reproduction coefficient was equal in the test and control experiments. The final number of cells generated and turning blue was also equal. De-aeration of the medium and high content of CO_2 in the first replanting decreased the fermentation rate; but beginning with the fifth generation an increase was observed. Next, negligible amounts of yeast cells were planted in 20° wort. Reproduction and total wort fermented decreased and then maintained a constant level. The rate of fermentation increased 1.5 to 2 times that of the controls. De-aeration of the medium and saturation with CO_2 increased the average rate of fermentation in all experiments. Yeast cells bred with CO_2 differed slightly in size and shape. Similar data, with some exceptions, were obtained in identical experiments with baking yeast. When brewing yeast was transferred into ordinary wort from treated wort, the reproduction and fermentation rates increased.

Zalenskii, O. V.
THE RELATIONSHIP OF RESPIRATION TO PHOTOSYNTHESIS IN PLANT LEAVES. [1962] [15]p. 12 refs.
Order from OTS or SLA $1.60 63-15925

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Biologicheskaya, 1961 [v. 26, no. 2] p. 202-212.

DESCRIPTORS: *Respiration, *Photosynthesis, *Plants (Botany), Light, Carbon dioxide, Labeled substances.

Gas exchange in the assimilatory cells of plants during photosynthesis and respiration in light and in dark was studied. Determinations were made of: (1) the evolution of $C^{14}O_2$ in respiration from the loss of radioactivity, measured directly in the plant material; (2) the absorption and evolution of CO_2 and $C^{14}O_2$ from measurements of the radioactivity of the ambient atmosphere; (3) the intensity of respiration from the change in the radioactivity of the mixture of CO_2 and $C^{14}O_2$ around the leaves; and (4) the intensity of respiration from the change

in concentration of CO_2 around the leaves. Hermetically sealed chambers were used. During 18 hours in the dark, the leaves of Sakhalin buckwheat lost about half of the $C^{14}O_2$ they had assimilated during 3 minutes of photosynthesis. The rate of evolution was at a maximum during the first hour, and then gradually decreased. The leaves gave off no $C^{14}O_2$ in the light. Experiments with astraglus leaves indicated the same $C^{14}O_2$ consumption in the dark as did buckwheat, but in light some slight decreases in radioactivity were found. When preliminary photosynthesis in $C^{14}O_2$ was increased to 2 hours, leaves in light evolved some of the $C^{14}O_2$ previously assimilated. With high temperatures, leaves with more heterotrophic tissue gave off more $C^{14}O_2$ than leaves with well developed assimilatory tissue; thus, the ratio of CO_2 released in light to that released in dark depends also on the structure of the assimilation organs.

Medical Specialties and Equipment

Heller, L. I.
IS THERE A CLINICAL BIOCHEMIST OR SPECIALIST IN MEDICAL CHEMISTRY (Klinicheskii Biokhimik ili Spetsialist po Meditsinskoi Khimii)? 26 Feb 63, 2p. NIH no. 2-58-63.
Order from OTS or SLA $1.10 63-19098

Trans. of Voprosy Meditsinskoi Khimii (USSR) 1962, v. 8 [no. 5] p. 550-551.

DESCRIPTORS: *Medical personnel, *Biochemistry, Education, *Professional personnel, Medical laboratories.

The relationships of physicians, clinical biochemists, biochemists and their role in medical sciences are discussed. The author attacks the position taken by A. V. Segrist in his article Contribution to the Problem of Chemical Biochemistry (Voprosy Meditisinskoi Khimii 8: 95-99: available in translation from OTS or SLA as 63-19097). The author opposes the use of physicians trained in biochemistry only for clinical investigations and their exclusion from experimental analysis of metabolic disorders. Physician specialists need to be prepared in medical biochemistry but not in the narrow field of clinical biochemistry.

Raupenstrauck.
PROCESS OF THE PREPARATION OF SOLUTIONS OF METALLIC SOAPS ACTING AS ANTISEPTICS. [1963] [5]p.
Order from OTS or SLA $1.10 63-16000

Trans. of French patent 319, 436, appl. 10 Mar 02, delivered 22 July 02, pub. 12 Nov 02.

DESCRIPTORS: *Germicides, *Soaps, *Metallic soaps, Solvents, *Oils, Phenols, Preparation.

Sigrist, A. V.
CONTRIBUTION TO THE PROBLEM OF CHEMICAL BIOCHEMISTRY (K Voprosu o Klinicheskoi Biokhimii). 20 Feb 63, 7p. 1 ref. NIH no. 2-49-63.
Order from OTS or SLA $1.10 63-19097

Trans. of Voprosy Meditsinskoi Khimii (USSR) 1962, v. 8, no. 1, p. 95-99.

DESCRIPTORS: *Biochemistry, *Medical personnel, Professional personnel, Education.

The role of biochemistry in the medical sciences is discussed. It is emphasized that biochemistry and clinical biochemistry should be one and the same field of study. The author suggests that clinical biochemists should have no less than 1 and 1/2 to 2 years of clinical medical experience. They should have the same relationship to the clinician as roentgenologist or physiotherapist.

Zakharov, S. V.
CONCERNING A. V. SIGRIST'S PAPER "PROBLEM OF CLINICAL CHEMISTRY" (O Stat'e A. V. Sigrista "K Voprosu o Klinicheskoi Khimii"). 27 Feb 63, 2p. 1 ref. NIH no. 2-59-63.
Order from OTS or SLA $1.10 63-19099

Trans. of Voprosy Meditsinskoi Khimii (USSR) 1962, v. 8 [no. 5] p. 551-552.

DESCRIPTORS: *Medical personnel, *Biochemistry, *Professional personnel, Education, *Medical laboratories.

The outline of the role of the clinical biochemist in the medical sciences presented by A. V. Sigrist in his article Contributions to the Problem of Chemical Biochemistry (Voprosy Meditsinskoi Khimii 8: 95-99: available in translation from OTS or SLA as 63-19097) is discussed. The author states that the present methods of biochemical analysis are antiquated. New methods are not used in biochemical laboratories because of lack of apparatus, needed reagents, and qualified personnel. The author recommends that clinical biochemistry be recognized as a scientific discipline of the laboratory work of medical institutions. The work should be directed as a single plan under the guidance of one of the institutes of the Academy of Medical Sciences. Publishing of a journal, "Clinical Biochemistry" would contribute to the development of this field of study.

Microbiology

Deppe, K. and Seehofer, F.
THE ADHESION MECHANISM OF CONIDIOSPORES OF PERONOSPORA TABACINA ADAM. [1962] 4p. (figs. omitted).
Order from SLA $1.10 63-16957

Trans. of Beiträge zur Tabakforschung [sic] 1962, no. 5, p. 177-[180].
Another trans. is available from K-H $5.00 as K-H 11816a [1962] 4p.

DESCRIPTORS: Adhesion, *Spores, *Fungus infections, *Tobacco, Plants (Botany).

On the basis of microscopic investigations it is assumed that the trichomes - with their dew-condensing qualities (when moist) and on the basis of their adhesiveness in the dry state - trap and fix the conidiospores. This gives a basis for the epidemic appearance of Peronospora tabacina Adam. (Author)

Devillers, P.
COUNTING OF YEASTS AND OSMOPHILIC MOULDS IN SUGAR AND SIRUPS. [1963] 8p. 4 refs.
Order from SLA $1.10 63-16353

Trans. of Ind[ustries] Alim[entaires et] Agric[oles] (France) 1957, v. 74, p. 269-271.

DESCRIPTORS: *Yeasts, *Molds (Organisms), *Carbohydrates, *Counting methods, Culture media.

Meiklejohn, Jane.
REDUCTION OF NITRATES AND ANAEROBIOSIS (Reduction des Nitrates et Anaerobiose). [1963] 10p. (refs. omitted).
Order from SLA $1.10 63-16584

Trans. of Inst[itut] Pasteur [Paris]. Ann[ales] (France) 1949, v. 77, p. 389-394.
Another trans. is available from SLA as 58-809.

DESCRIPTORS: *Nitrates, *Anaerobiology, Bacteria, Soils, Nitrogen, *Biosynthesis, Reduction (Chemistry).

Meshcheryakov, A. A.
ISOLATION OF THE ANTHRAX BACTERIOPHAGE AND ITS UTILIZATION FOR THE DIFFERENTIAL DIAGNOSIS OF BAC. ANTHRACIS (Izolyatsiya Sibireyazvennogo Bacteriofaga i Ispol'zovanie Ego dlya Differentsial'noi Diagnostiki Bac. Anthracis). [1963] 17p. 21 refs. Trans. V-1799.
Available on loan from OTS or SLA 63-19610

Trans. of Vsesoyuznyi Institut Eksperimental'noi Veterinarii. Trudy (USSR) 1962, v. 26, p. 46-55.

DESCRIPTORS: *Bacillus anthracis, *Bacteriophages, Diagnosis, Separation, Storage.

There exist lysogenic strains among the old museum anthrax strains. It is possible to isolate the anthrax bacteriophage from such strains under the effect of a mild irradiation with ultraviolet rays. The anthrax strain Davis (asporogenic) is a highly sensitive indicator strain, and it is suitable for the propagation of the anthrax bacteriophage. The variant of the anthrax bacteriophage, obtained by us, is virulent, highly specific, with a wide range of action; is suitable for a rapid indication and differential diagnosis of the pathogen of anthrax and can be recommended for the use in practical laboratories. Under regular conditions of storage in the refrigerator, the bacteriophage preserves its active and specific characteristics during the course of a year (the time of observation). (Author)

Rismondo, R.
ON THE PHENOMENON OF BACTERIOLYSIS BY AMINO ACIDS AND BACTERIAL EXTRACTS. [1963] 2p. 2 refs.
Order from SLA $1.10 63-16385

Trans. of Soc[ietà] Ital[iana di] Biol[ogia] Sper[imentale]. Boll[ettino] 1946, v. 22, p. 1272-1273.

DESCRIPTORS: *Bacteria, *Amino acids, Escherichia, Culture media, Decomposition.

It is shown that the mixture norvaline plus B. subtilis extract causes in Bacterium pneumoniae Friedländer the same process of lysis as in Escherichia coli.

Schmidt, O. C.
THE PROBLEM OF THE INOCULATION WITH AZOTOBACTER, I. [1963] 18p. (refs. omitted).
Order from SLA $1.60 63-16135

Trans. of Zeitschrift für Pflanzenernährung, Düngung, Bodenkunde (West Germany) 1948, v. 40, p. 40-51.

DESCRIPTORS: *Azotobacteraceae, *Soils, Bacteria, Seeds, Plants (Botany), Nitrogen, Biochemistry.

Neurology and Psychiatry

Dmitrieva, I. V. and Sokolova, A. F.
FINDINGS ON THE APPLICATION OF VITAMIN B_{12} IN PSYCHIATRIC PRACTICE (Opyt Primeniya B_{12} v Psikhiatricheskoi Praktike) tr. by Wanda Feeley Sep 60, 5p. PSC no. 58-1512.
Order from OTS or SLA $1.10 62-24329

Trans. of Zhurnal Nevropatologii i Psikhiatrii (USSR) 1958, v. 58, p. 208-211.

DESCRIPTORS: *Vitamin B complex, Psychiatry, Metabolism, *Psychoses, Therapy.

Besides its use in treating various diseases and its favorable effect upon the organism, vitamin B_{12} has a therapeutic effect upon various psychic disorders. Vitamin B_{12} acts as a catalyzer in a number of metabolic reactions. Case histories of patients with various forms of schizophrenia were presented. Chronic patients who were treated unsuccessfully by other methods were chosen for this study. One patient with the catatonic form was inaccessible to contact, inhibited, negativistic, and had to be fed. After 9 days of vitamin B_{12} therapy, he began to eat by himself, became accessible, answered questions, and asked to be released from the hospital. A 20-year-old patient was acutely ill, slept poorly, was suspicious, refused to answer questions, and stopped eating; she was admitted in a catatonic stupor. On the 3rd day of vitamin B_{12} therapy she became quite social and animated, and began to answer questions and to eat independently. A complete remission occurred after hypoglycemic doses of insulin. Similar results were obtained in 3 other patients after vitamin B_{12} therapy. The percentage of remissions and considerable improvements, however, were comparatively low. More noticeable changes were observed with small doses of 15γ injected 15 times daily than with larger doses.

Markov, Kh. M.
CHANGES IN THE SPONTANEOUS BIOELECTRIC ACTIVITY OF THE BRAIN DURING SERUM SENSITIZATION. 12 July 63, 12p. 22 refs. JPRS: 20150.
Order from OTS $0.50 63-31270

Trans. of #Zhurnal Vysshei Nervnoi Deyatel'nosti (USSR) 1963, v. 13, no. 2, p. 316-325.

DESCRIPTORS: *Brain, *Proteins, Sensitivization, Bioelectronics, Rabbits, *Electroencephalography.

During the course of protein sensitization, rabbits were observed to have phasal changes in cerebral bioelectric activity. During the first days of sensitization, there was a predominance of some degree of desynchronization of potentials in the frontal area of the cortex, and a 4-7/second synchronized rhythm in the occipital area of the cortex, the hippocampus as well as occasionally in non-specific subcortical structures — the brain stem reticular formation, medial thalamus, and the hypothalamus. On the 7-8th day, a reverse displacement was obsérved; while from the 12-20th day of sensitization, changes again occurred in the EEG as they had during the first days, and were sometimes even more marked. Isolated rabbits displayed still other changes: a dissociation between neocortical changes in activity in the form of severe progressive drop of amplitude potentials of the flattened type, on the one hand, and the archicortex (hippocampus, brain stem reticular formation, and hypothalamus) on the other hand, where a high bioelectric activity was recorded A marked increase in the electric activity of the hypothalamus, reticular formation, and hippocampus was observed in a number of experiments. (Author)

Svec, Frantisek.
PHARMACODYNAMICS OF PSYCHIC FUNCTIONS OF THE CENTRAL NERVOUS SYSTEM. 22 May 63, 79p. JPRS: 19334.
Order from OTS $2.00 63-21187

Trans. of mono. Farmakodynamika, Bratislava, 1960, p. 315-363.

DESCRIPTORS: *Brain, *Spinal cord, *Hallucinogens, *Serotonin, *Tranquilizers, *Reserpine, Hormones, Psychoses, Neurology, Toxicity, Metabolism.

Pathology

Ahn, Bertil von.
AN ELECTROCARDIOGRAPHIC INVESTIGATION OF THE EFFECT OF TOBACCO SMOKE ON THE HEART IN DIFFERENT DEGREES OF SMOKES. II. NOVICES AND NON-SMOKERS. [1962] 26p. (refs. omitted).
Order from SLA $2.60 63-16913

Trans. of Svenska Läkartidningen, 1947, v. 44, p. 785-804.
Another trans. is available from K-H $31.25 as K-H 6918-b [1962] 25p.

DESCRIPTORS: *Tobacco, *Smokes, *Heart, *Electrocardiography, Cigarettes.

See also 63-16579

Akkerman, V. V.
ON A COMBINATION OF LEUKOSIS WITH PREGNANCY, tr. by P. V. DePorte. 21 May 63 [6]p. 10 refs. NIH no. 5-27-63.
Order from OTS or SLA $1.10 63-19684

Trans. of Klin[icheskaya] Med[itsina] (USSR) 1960, v. 38, no. 1, p. 103-107.

DESCRIPTORS: *Pregnancy, *Leukemia, *Cancer, Reproduction, Embryoes.

Among 231 women suffering from leucosis gestation was observed in I case of acute leucosis, in II cases of chronic myelosis and never during lymphadenosis. In the instance of acute leucosis, a deterioration in the course of the process supervened, following artificially interrupted pregnancy on its 16th week, with subsequent lethal outcome. In patients affected with chronic myelosis, four had normal delivery of healthy infants and seven-artificial interruption of gestation, When considering indications to interruption of pregnancy, individual approach should be practiced with due account of the fact that chronic myelosis in conjunction with pregnancy has better prospects for favourable prognosis. (Author)

Anguera, George and Schwartz, Daniel.
A CONTRIBUTION TO THE ETIOLOGY OF RETINAL VASCULAR DISORDERS: A STUDY OF CERTAIN FACTORS, PARTICULARLY ALCOHOL AND TOBACCO. [Nov 60] 23p.
Order from SLA $2.60 63-16947

Trans. of Revue[de l']Athéroscléŕ[ose] (France) 1959, v. 1, p. 239-255.
Another trans. is available from K-H $28.75 as K-H 10402-2, Nov 60, 23p.

DESCRIPTORS: *Retina, *Blood circulation, Diseases, *Alcohols, *Tobacco, Smokes, Cigarettes, Nicotine.

Abasov, I. T.
STUDIES OF THE EXCRETORY FUNCTION OF THE LIVER IN VARIOUS DISEASES WITH THE AID OF BROMSULFALEIN (BSP). [1963] [19]p. 57 refs. FASEB manuscript no. S296-2.
Order from OTS or SLA $1.60 63-23014

Trans. of Klinicheskaya Meditsina (USSR) 1962, v. 40, no. 9, p. 121-129.

DESCRIPTORS: Excretion, Liver, Diseases, *Liver function tests, Dyes, *Sulfobromophthalein sodium, *Diagnostic agents.

Balachanu, M., Biner, Zh., and Krishan, O.
A METHOD OF CULTURING TUMORS IN CHICK EMBRYO (K Metodike Kul'tivirovaniya Opukholei v Kurinom Embrione). [1963] [8]p. 18 refs. FASEB manuscript no. S 22-3.
Order from OTS or SLA $1.10 63-23058

Trans. of Arkhiv Patologii (USSR) 1962, v. 24, no. 10, p. 80-82.

DESCRIPTORS: *Histological techniques, *Tumors, Tissue cultures, Embryonated egg technique, Tissues (Biology), Cells (Biology), *Transplantation, Growth.

In order to study the antitumoral action of different substances on the development of tumors transplanted into

the egg during incubation, it is necessary to use a method giving a high percentage of positive transplantations. Homogenization of the tumor tissue with Potter's apparatus considerably facilitates transplantation and simultaneously increases the percentage of takes. (Author)

Barbano, G., Barcelli, C., and Matteis, F. de.
ELECTROCARDIOGRAPHIC CHANGES FOLLOWING TOBACCO SMOKING (NORMAL SUBJECTS, PATIENTS WITH DYSTONIC AND CORONARY DISORDERS). [1962] 4p.
Order from SLA $1.10 63-16927

Trans. of Soc[ietà] Ital[iana di] Cardiol[ogia]. Atti, 1954, v. 16, p. 105-107.
Another trans. is available from K-H $4.00 as K-H 8619-a [1962] 3p.

DESCRIPTORS: *Electrocardiography, *Tobacco, Heart, *Cigarettes, Smokes, Toxicity, Diseases, Blood circulation.

Bastai, Pio.
CHRONIC TOBACCO POISONING IS THE CAUSE OF PREMATURE AGING AND PROMOTES THE APPEARANCE OF SERIOUS CARDIOVASCULAR AND PULMONARY DISEASES. [1962] 19p.
Order from SLA $1.60 63-16928

Trans. of Rassegna Clinico-Scientifica (Italy) 1958, v. 34, no. 12, p. 305-311.
Another trans. is available from K-H $22.50 as K-H 9298-b [1962] 18p.

DESCRIPTORS: *Tobacco, Smokes, Nicotine, Cigarettes, Diseases, *Respiratory system, *Circulatory system, Aging (Physiology), Poisoning.

Bergqvist, Sven.
TOBACCO SMOKING AND LUNG CANCER. [1962] 11p.
Order from SLA $1.60 63-16942

Trans. of Svensk[a] Läk[ar]tidn[ingen] 1959, v. 56, no. 26, p. 1843-1851.
Another trans. is available from K-H $13.75 as K-H 9955 [1962] 11p.

DESCRIPTORS: *Lungs, *Cancer, *Tobacco, Smokes, Cigarettes.

Bernasconi, Paul.
TABAGISM AND ARTERITIS OF THE LOWER LIMBS. [1962] 3p.
Order from SLA $1.10 63-16938

Trans. of Algérie Médicale (Algeria) 1957, v. 61, no. 12, p. 1297-1298.
Another trans. is available from K-H $3.00 as K-H 8619-b [1962] 3p.

DESCRIPTORS: *Tobacco, Etiology, Inflammation, *Arteries, *Diseases, Legs, Cigarettes.

Statistics confirm that arteritis of the lower limbs is a disease of men; in women it is not observed until after the age of 60 and often much later. The association with coronaritis is often observed. Diabetes is not a very frequent etiological factor. It shows the extreme frequency of the "tobacco" factor which is only slightly reduced in old patients and perhaps in diabetics. Such a frequency does not appear at all to be found in patients with coronary diseases. In patients genetically predisposed to atherosclerosis or diabetes, tobacco plays a major part in the disclosure of the disease. This points out the desirability of discontinuing the use of tobacco in the case of arteritic patients, and also in the case of patients with real "arterial heredity" and diabetics.

Bochkov, N. P. and Nemtseva, L. S.
USE OF THE TECHNIQUE OF INCUBATION OF TISSUES IN VITRO TO STUDY MAMMALIAN KARYOTYPES. [1962] [8]p. 12 refs. FASEB manuscript no. S 129-2.
Order from OTS or SLA $1.10 63-15996

Trans. of Tsitologiya (USSR) 1962, v. 4, no. 3, p. 365-367.

DESCRIPTORS: *Tissues (Biology), Mammals, Colchicine, *Cytology, Culture media, *Mitosis, Genes, *Cells (Biology), Genetics.

The technique of incubation of tissues in vitro, modified for cytogenic purposes, was employed using a salt medium containing colchicine. Mitosis continued to completion in bone marrow cells which were incubated in physiological saline and in Meshkov-Severin medium. When hypotonic sodium citrate solution was used, the dividing cells continued their cycle but generative changes were observed in some cells. Experiments were undertaken to determine the concentration of colchicine required to arrest mitosis at the metaphase stage. The limiting concentration for monkey's marrow was 1:500 000, and that for mouse marrow was 1:100 000. In these experiments the optimal incubation time was 30 minutes, and the optimal temperature was 37°C. At the above concentration, duration, and temperature of the medium, mitosis was arrested at the metaphase stage; this enabled a study to be made of the dividing spermatogonia of monkeys and the regenerating mouse liver, as well as the marrow of monkeys and mice. Some advantages of this method over other techniques are: preparations can be obtained within 1.5 to 2 hours, there is no risk of injury to the animal, and reduplication of the chromosomes as it occurs in the living organism can be visualized in vitro.

Braun, Volkmar.
LOBELINE FOR CHRONIC NICOTINE ABUSE. [1963] 3p. 3 refs.
Order from SLA $1.10 63-16618

Trans. of Therapie der Gegenwart (West Germany) 1960, v. 99, no. 8, p. 403.
Another trans. is available from K-H $3.75 as K-H-10764-b [1962].

DESCRIPTORS: Alkaloids, *Nicotine, Tobacco, Smokes, Drugs.

Bunina, T. L.
FAMILIAL AMYOTROPHIC LATERAL SCLEROSIS. 10 June 63, 9p. 7 refs. NIH no. 6-12-63.
Order from OTS or SLA $1.10 63-23134

Trans. of Zh[urnal] Nevropat[ologii] i Psikhiatr[ii] (USSR) 1960, v. 60, no. 9, p. 1096-1100..

DESCRIPTORS: *Amyotrophic lateral sclerosis, *Genetics, Etiology, Diseases, Nervous system.

Chazov, E. I.
ANTIHEPARIN AND ANTIFIBRINOLYTIC ACTIVITY OF THE BLOOD IN PATIENTS WITH ATHEROSCLEROSIS. [1963] [10]p. 17 refs. FASEB manuscript no. S 404-2.
Order from OTS or SLA $1.10 63-23033

Trans. of Terapevticheskii Arkhiv (USSR) 1962, v. 34, no. 10, p. 36-40.

DESCRIPTORS: *Anticoagulants, Drugs, Physiology, *Atherosclerosis, *Heparin, *Fibrinogen, Inhibition, Thrombosis, Blood coagulation.

With the progressive development of atherosclerosis the antiheparin and antifibrinolytic activity of the blood increases. The increase in the degree of these inhibitory effects is one of the pathogenetic mechanisms responsible for the high incidence of thrombosis in atherosclerosis. The rise in the level of the antifibrinolytic activity of the blood observed 24 hr after administration of fibrinolysin explains the need for repeating its administration and for giving simultaneous heparin therapy. (Author)

Chiauzzi, A.
MEDICO-SOCIAL REFLECTIONS OF TOBACCO POISONING. [1962] 32p. 42 refs.
Order from SLA $3.60 63-16941

Trans. of Acta Medicinae Legalis et Socialis (Belgium) 1957, v. 10, no. 4, p. 577-593.
Another trans. is available from K-H $27.50 as K-H 8650-a [1962] 30p.

DESCRIPTORS: *Tobacco, *Poisoning, *Medicine, *Sociology, Cigarettes.

Chiurco, G. A. and Tarantini, A.
CLINICAL-SOCIAL ASPECTS OF PRECANCEROUS AND PULMONARY CANCEROUS CASES. [1962] 15p.
Order from SLA $1.60 63-16946

Trans. of Acta Medicinae Legalis et Socialis (Belgium) 1959, v. 12, no. 3/4, p. 147-155.
Another trans. is available from K-H $19.55 as K-H 11053-a [1962] 15p.

DESCRIPTORS: Attitudes, *Adjustment (Psychology), *Cancer, *Lungs, Therapy, Sociology.

Clay, Alex and Biserte, Gerard.
THE ROLE OF THE ENVIRONMENT IN THE ETIOLOGY OF PULMONARY CANCER ETIOLOGICAL CONSIDERATIONS. [1963] 48p. 100 refs.
Order from SLA $4.60 63-16616

Trans. of Cancerologie (France) 1957, v. 3, no. 2, p. 63-75.
Another trans. is available from K-H $65.00 as K-H 9561-b [1962] 48p.

DESCRIPTORS: *Cancer, *Carcinogenic agents, *Etiology, *Lungs, Ecology, *Smokes, Biological environment.

Courtey, B. and Denefle, J.-P.
PARAFFIN OIL: VECTOR AGENT OF TOBACCO TARS IN THEIR ACTION ON THE GROWTH OF PULMONARY FIBROBLASTS. [1963] 15p. 2 refs.
Order from SLA $1.60 63-16583

Trans. of Pathologie et Biologie (France) 1961, v. 9, no. 7/8, p. 825-830.
Another trans. is available from K-H $18.75 as K-H-11363-a [1962] 15p.

DESCRIPTORS: Hydrocarbons, Oils, *Disease carriers, *Tobacco, Growth, *Lungs, *Tissues (Biology), Tar.

A study was made of the mode of action of tobacco tars on the pulmonary tissue in vitro. An analysis was accomplished on morphological and statistical changes of the pulmonary fibroblastic growth induced by the Carbowax (solvent) alone or associated with tobacco. Tars by direct contact or by diffusion through the paraffin oil. Since paraffin oil permits the diffusion of liposoluble substances, we were able to show the intervention on the growth of the fibroblasts of the liposoluble fractions of the tobacco tars. The hydrosoluble fractions come into play only in the cases of contact. The vacuolar degeneration of the fibroblasts is shown, for slightly diluted solutions, more in the contact than in the diffusion. Statistically, the action of the tobacco tars provokes a contraction of the fibroblastic growth fringes when there is contact, and on the contrary their elongation when they diffuse through the oil. (Author)

Delarue, J. and Chomette, G.
CONTRIBUTION TO THE STUDY OF MALPIGHIAN METAPLASIAS OF THE BRONCHIAL MUCOUS MEMBRANE. [1962] 58p. (figs. omitted) 151 refs.
Order from SLA $5.60 63-16948

Trans. of Ann[ales] d'Anatom[ie] Pathol[ogique] (France) 1956. [n. s. v. 1] no. 3, p. 299-328.
Another trans. is available from K-H $68.75 as K-H 9667 [1962] 55p.

DESCRIPTORS: *Lungs, Pathology, *Mucous membranes, Tissues (Biology), Etiology, *Cancer.

For a long time malpighian metaplasia, especially that of the bronchi, has been considered a precancerous

lesion. A transformation of the mucous membrane which is very frequently encountered under diverse circumstances is involved; while it is common in the course of chronic bronchopneumopathies, its rarity in silicotic pleura and bronchiectases is nevertheless remarkable; on the other hand, it is observed in the course of acute bronchopathies and in experimentally induced avitaminosis. The histological aspect is that of a more or less mature epidermoid differentiation to which inflammatory modifications of the subjacent chorion are constantly added; therefore, a multiple tissue, epithelial and connective transformation is involved which affects all of the bronchial mucosa. The neoplastic transformation of such a lesion cannot be sustained, malpighian metaplasia accompanies bronchial cancers only inconstantly and the differentiation of the latter quite often is entirely different from that of the neighboring metaplasia (anaplastic carcinomas, epistomas). The formation, which is sometimes rapid, and the unexpected occurrence of metaplasia under certain experimental conditions (vascular exclusions) suggest the important role of circulatory disturbances in its genesis. (Author)

Denoix, P.-F. and Gellé, X.
ESTIMATION OF THE COMPARATIVE IMPORTANCE OF BRONCHOPULMONARY CANCER IN FRANCE AND IN OTHER COUNTRIES. [1962] 36p. 8 refs.
Order from SLA $3.60 63-16934

Trans. of Assoc[iation] Française pour l'Étude du Cancer. Bull[etin] 1955, v. 42, p. 247-278.
Another trans. is available from K-H $45.00 as K-H 6871-b [1962] 36p.

DESCRIPTORS: Vital statistics, *Lungs, *Cancer, France, Etiology, Tobacco, Smokes, *Cigarettes, *Respiratory system.

It was found on going back as far as documentation permits, a regular increase of the death rates for bronchopulmonary cancer in France and in the various countries studied. Since the beginning of this documentation the development is regular; one cannot affirm acceleration at any given moment. The increase of morbidity is distributed uniformly over all ages. In France a correlation has been found between the quantity of tobacco sold and the mortality from broncho pulmonary cancer in each department. (Author)

Denoix, Pierre F., Schwartz, Daniel, and Anguera, Georges.
THE FRENCH INVESTIGATION ON THE ETIOLOGY OF BRONCHOPULMONARY CANCER. [1963] 65p. 13 refs.
Order from SLA $6.60 63-16935

Trans. of Association Française pour l'Étude du Cancer. Bulletin, 1958, v. 45, Jan/Mar, p. 1-37.
Another trans. is available from K-H $77.50 as K-H 8619-d [1962] 62p.

DESCRIPTORS: Etiology, *Cancer, Lungs, *Respiratory system, France, *Cigarettes.

Domagalla, H. and Ley, H.
INVESTIGATIONS CONCERNING THE QUESTION OF THE SULFUR METABOLISM IN CANCER PATIENTS. [1962] 7p. 15 refs.
Order from SLA $1.10 63-16961

Trans. of Zeitschrift für Klinische Medizin (West Germany) 1953, v. 152, p. 240-243.
Another trans. is available from K-H $8.75 as K-H 9827-a [1962] 7p.

DESCRIPTORS: *Sulfur, *Metabolism, *Cancer, *Cystine, *Excretion urine.

Thirteen healthy persons and 21 cancer patients were given 2.0 g. of cystine and in these persons the total sulfur content of the 24 hr. quantity of urine, before and after administration of cystine, was determined quantitatively. In addition, this determination was made for 4 days in succession--with cystine administration on the 2nd and 4th day--on 3 healthy persons and 3 cancer patients. This gave the following result: (1) The daily urine volume increases after cystine administration in healthy persons by 19% on the average while it drops by 1.25% in neoplasm patients. (2) The total separation of sulfur in the 24-hour urine is approximately the same for healthy persons and cancer patients before cystine administration. (3) After administration of cystine the daily separation of sulfur increases on the average by 81% in healthy persons but only by 31% in the patients. (4) Determinations made on 4 successive days with double quantities (of cystine) showed that this different behavior of healthy persons and cancer patients is constant and that the separation of the sulfur after administration of cystine can be considered ended after 24 hours. One might therefore speak of a special cystine or sulfur avidity of the tumor tissue. (5) The width of variation in the individual values is very great. For this reason the method might not acquire any significance in the diagnosis of cancer. (Author)

Dormanns [E].
THE COMPARATIVE GEOGRAPHIC-PATHOLOGICAL CARCINOMA STATISTICS IN GERMANY FOR 1925-33. [1962] 12p.
Order from SLA $1.60 63-16962

Trans. of Z[eitschrift für] Krebsforschung (Germany) 1937, v. 45, p. 471-479.
Another trans. is available from K-H $15.00 as K-H 6918-c [1962] 12p.

DESCRIPTORS: *Cancer, Geography, Pathology, Statistical analysis.

Dormanns, E.
THE INCREASE IN THE INCIDENCE OF CANCER WITH SPECIAL CONSIDERATION OF CANCER OF THE LUNGS. [1962] 17p.
Order from SLA $1.60 63-16963

Trans. of Schweiz[erische] Z[eitschrift für] Allgem-[eine] Path[ologie] u[nd] Bakt[eriologie] 1955, v. 18, p. 907-918.
Another trans. is available from K-H $21.25 as K-H 6918-d [1962] 17p.

DESCRIPTORS: *Cancer, *Lungs, Carcinogenic agents.

Dorofeev, N. M.
UMBILICAL HERNIA IN EARLY INFANCY (K Voprosu o Pupochnykh Gryzhakhu Detei Rannego Grudnogo Vozrasta). [1963] 7p. 7 refs. [DSIR] NLL M. 8989.
Order from OTS or SLA $1.10 63-15232

Trans. of Sovetskaya Meditsina (USSR) 1962 [v. 25] no. 4, p. 57-[60].

DESCRIPTORS: *Hernia, Abdomen, *Infants, Healing, Ligatures.

A study is made of the long-term results of the dry treatment of the umbilical cord in the newborn, recommended by us, in order to find out whether early separation of the cord and the type of healing of the umbilical wound has any influence upon the incidence of umbilical hernias. The frequency of umbilical hernias with the ordinary method of treatment of the cord is 3, 4%, and with the dry method about 2, 3%. It follows that the new method which secures earlier separation of the umbilical stump and smooth healing of the umbilical wound gives a somewhat lower incidence of umbilical hernias. The smaller number of umbilical hernias when our method is used as compared with the ordinary method is due to the fact that with our method the umbilical wound heals by first intention. This type of healing accelerates the process of scarring and the formation of the umbilical ring which has a favourable effect upon the firmness of the abdominal wall in the region of the umbilical ring. (Author)

Emerdei, A. I.
DONNÉES SUR LA TOXICITÉ DU TÉTRAFLUOR-ETHYLENE (Toxicity of Tetrafluoro-Ethylene). 12p. 4 refs. FR-1742.
Order from OTS, ETC or CNRS $0.80 62-26457

Trans. in French of unidentified Russian language article, n. d.

DESCRIPTORS: *Ethylenes, *Fluorides, *Toxicity, Rats, Rabbits, Pathology, Brain, Lungs, Veins.

Fiori, W.
ELECTROCARDIOGRAM OF THE RABBIT UNDER EXPERIMENTAL INTOXICATION BY NICOTINE. [1962] 8p. 11 refs.
Order from SLA $1.10 63-16895

Trans. of Societa Italiana di Biologia Sperimentale. Bollettino, 1960, v. 36, no. 12, p. 598-602.
Another trans. is available from K-H $10.00 as K-H-10607-a, 1962, 8p.

DESCRIPTORS: Rabbits, *Nicotine, *Electrocardiography, Toxicity, Tobacco, Cigarettes, Smokes.

Fink, Hermann, Schlie, Ilse and others.
NON-FAT MILK AQUIRES CHARACTERISTICS DURING TECHNICAL DRYING WHICH CAUSE LIVER NECROSIS. [1963] 3p. 3 refs.
Order from SLA $1.10 63-16292

Trans. of die Naturwissenschaften (West Germany) 1955, v. 42, no. 1, p. 21-22.
Another trans. is available from SLA $1.80 as 59-17308 [1959] 2p. 3 refs.

DESCRIPTORS: *Milk, Dehydrated foods, *Liver, *Necrosis, Rats.

Forsgren, Eris.
IS NICOTINISM AN INCURABLE PUBLIC DISEASE? [1962] 13p.
Order from SLA $1.60 63-16894

Trans. of Svenska Läkartidningen, 1960, v. 57, no. 6, p. 398-406.
Another trans. is available from K-H $15.00 as K-H-10401-a, 1962, 12p.

DESCRIPTORS: *Nicotine, Toxicity, *Smokes, Cigarettes.

Fossati, Carlo.
TOBACCO SMOKE AND PULMONARY TUMORS. [1962] 14p. 49 refs.
Order from SLA $1.60 63-16669

Trans. of Minerva Medica (Italy) 1961, v. 52, no. 70, p. 2964-2968.
Another trans. is available from K-H $17.50 as K-H 11548-b, 1962, 14p.

DESCRIPTORS: *Tobacco, *Smokes, *Lungs, *Neoplasms, *Tumors, Cigarettes.

Fusari, G.
CONCERNING THE STATISTICAL RELATION BETWEEN TOBACCO SMOKE AND LARYNGEAL CANCER. [1962] 6p. 24 refs.
Order from SLA $1.10 63-16673

Trans. of Bollettino delle Malattie dell'Orecchio della Golae del Naso (Italy) 1957, v. 75, no. 2, p. 175-179.
Another trans. is available from K-H $7.50 as K-H 6821-a, [1962] 6p.

DESCRIPTORS: *Tobacco, Smokes, *Larynx, *Cancer, Cancer research, Vital statistics.

A study was made of the habit of smoking in subjects affected by laryngeal cancer. Patients were observed in the Ear, Nose and Throat Clinic of the University of Pisa and a frequent correlation was found between tobacco smoke and malignant tumors (on 87 male cases 86 were smokers, on 4 female cases 3 were smokers). In healthy Italian adult population the percentage of habitual smokers was 46 according to the statistical study of 1954. This observation confirms once more the tobacco influence on the genesis of cancer: the increasing use of tobacco could explain the increasing incidence of respiratory tract cancer observed during the last few years. .(Author)

Gornak, K. A. and Yastrebtsova, N. L.
MORPHOGENESIS OF EXPERIMENTAL ATHEROSCLEROSIS IN DOGS (HISTOCHEMICAL INVESTIGATION). [1963] [26]p. 15 refs. FASEB manuscript no. S 321-2.
Order from OTS or SLA $2.60 63-23026
figs available separately on loan from OTS

Trans. of Arkhiv Patologii (USSR) 1962, v. 24, no. 7, p. 34-42.

DESCRIPTORS: Morphology, *Atherosclerosis, Dogs, Histology, Cells (Biology), Blood vessels.

The highly varied changes noted in the walls of blood vessels in experimental atherosclerosis (in the form of tissue disorganization, reaction to this disorganization, and regeneration of structural elements) are caused both in infiltration of lipids from the blood and by metabolic disturbances in the vascular wall proper and by destruction of its structural elements. An increase in the amount of acid mucopolysaccharides is the earliest change in the vascular walls, and this precedes the appearance of foci of lipoidosis and atheromas. The varied cellular reaction in the atherosclerotic lesions and the presence of macrophages and RNA-rich cells testifies to the intense metabolic activity in these foci. Regeneration of argyrophilic, collagenous, and elastic fibers and the appearance of sclerotic foci take place with participation of the mucopolysaccharides, which form complexes with ground substance proteins. Three consecutive phases of injury can be distinguished in the morphogenesis of experimental atherosclerosis: (1) initial nonspecific changes; (2) early specific atherosclerotic manifestations; (3) presence of focal or focal-coalescent lesions typical of experimental atherosclerosis. (Author)

Gradov, M. G. and Sholin, N. I.
THE NUCLEIC ACID CONTENT OF THE BLOOD IN CHILDREN WITH DISEASES OF THE HEMATOPOIETIC SYSTEM. [1963] [18]p. FASEB manuscript no. S 400-2.
Order from OTS or SLA $1.60 63-19361

Trans. of Akademiya Meditsinskikh Nauk SSSR. Vestnik, 1962, v. 17, no. 10, p. 52-59.

DESCRIPTORS: *Nucleic acids, Blood, *Children, *Diseases, *Hemopoietic system, Hemopoiesis, *Leukemia, Hematology, Leukocytes, Ribonucleic acids, Desoxyribonucleic acids.

The NA content in the blood of children with acute myelogenous leukemia was found to range between 0.058 and 22.62μg per ml of blood. In most of the cases studied, the $\frac{P_{RNA}}{P_{DNA}}$ ratio was found to exceed unity, indicating a preponderance of RNA in the blood. The NA content in the blood of children with acute leukemia is directly proportional to the number of circulating leukocytes in the peripheral blood. The results of observations on a group of patients with leukemia and lymphogranulomatosis point to a tendency for the blood NA level and the $\frac{P_{RNA}}{P_{DNA}}$ ratio to fall as the clinical condition of the patient improves or the disease enters a phase of remission; conversely, a rise in the blood NA level, and especially in the RNA, most often is associated with an exacerbation of the disease. (Author)

Grishkun, G. I.
NERVOUS STRUCTURES IN THE GRANULATION TISSUE OF A SKIN WOUND. [1962] [18]p. 20 refs. FASEB manuscript no. S 142-2.
Order from OTS or SLA $1.60 63-15998

Trans. of Arkhiv Patologii (USSR) 1962, v. 24, no. 3, p. 53-60.

DESCRIPTORS: Nervous system, *Tissues (Biology), *Skin, *Wounds, *Nerves, Morphology, Healing, *Regeneration.

A study of the regeneration of the nervous elements of granulating wounds must consider the genesis of the wound (mechanical injury, burn, opening of an abscess), the course of the wound (normal or delayed healing), and its character (complicated or uncomplicated). Regeneration of nerve fibers was not detected in any preparation from wounds after surgery; changes were observed in nerve fibers in tissues directly surrounding the wound. Newly formed nerve fibers were seen in wounds from opening of abscesses, aged 17 and 32 days. Three periods in the innervation of granulation tissue were distinguished: (1) disorganization and death of old nerve fibers with no development of granulation tissue, (2) growth of denervated granulation tissue, and (3) onset of the formation of nerve fibers in the tissue. In the third period rapid maturation of the granulation tissue and modeling of its surface with reticular tissue occurs. After modeling the new nerve fibers follow the course of balls of dense, fibrous connective tissue between the blood vessels. The source of the newly forming nerves is the nerve fibers in the dermis forming the granulation tissue.

Grupper, Ch., Bregeat, P., and Juge, P.
A CASE OF "NIVAQUINO"-TABAGIC RETINOPATHY IN A PATIENT AFFECTED WITH SUBACUTE LUPUS ERYTHEMATOSUS. [1962] 8p. 10 refs.
Order from SLA $1.10 63-16904

Trans. of Société Française de Dermatologie et de Syphiligraphie. Bulletin, 1960, v. 67, no. 2, p. 234-238.
Another trans. is available from K-H $10.00 as K-H 10809-c [1962].

DESCRIPTORS: *Tobacco, *Tuberculosis, *Skin, *Retina, Diseases.

Guagliano, G. and Stoppani, L.
FUNCTIONAL MODIFICATIONS OF THE ARTERIOLE-CAPILLARY CIRCULATION OF THE LIMBS PRODUCED BY TOBACCO SMOKE ALONE AND IN UNION WITH VASODILATORY DRUGS. [1962] 11p.
Order from SLA $1.60 63-16072

Trans. of Minerva Cardioangiologica (Italy) 1957, v. 5, no. 2, p. 597-600.
Another trans. is available from K-H $13.75 as K-H-8809-a, 1962, 11p.

DESCRIPTORS: *Blood circulation, *Arteries, Capillaries, Arms, Legs, *Tobacco, Smokes, Cigarettes, Nicotine, *Vasomotor drugs.

A study was made, by means of photoplethysmography and cutaneous thermometry of the functional modifications produced by tobacco smoke on the surface circulation of the limbs of 16 habitual smokers, kept in a state of rest for one hour in a temperature-controlled area at constant temperature and humidity. A marked reduction of the blood flow to the most peripheral limbs. (hand, foot) was observed during and immediately after smoking. The mixing of the vasodilator substances with tobacco can be effectively used in protecting against vasoconstrictive toxic attacks caused by substances contained in tobacco smoke on the peripheral arteriole-capillary regions of the joints. (Author)

Guerin, M. and Cuzin, J.-L.
CANCEROGENIC ACTION OF TAR FROM TOBACCO SMOKE ON THE SKIN OF THE MOUSE. [1962] 29p. (figs. omitted) 45 refs.
Order from SLA $2.60 63-16695

Trans. of Association Française pour l'Étude du Cancer. Bulletin, 1957, v. 44, no. 3, p. 387-408.
Another trans. is available from K-H $36.25 as K-H 8342-a [1962] 20p.

DESCRIPTORS: *Cancer, *Skin, Mice, *Tobacco, Smokes, *Tar, Carcinogenic agents, Cigarettes.

Experiments were made with a tar from smoke obtained by an automatic machine, a 6% solution in acetone of which was applied twice a week on the nape of the neck of unselected mice. Over a period varying from 1 to 2 years, the appearance of 15 cutaneous tumors among 220 mice, 10 papillomas and 5 epitheliomas, of which one with pulmonary and ganglionary metastases were observed in addition, one animal showed a subcutaneous sarcoma. No vesical tumor was found. Tobaccos of various origins did not show clearly significant differences in their cancerogenic power. (Author)

Guerin, M. and Guzin, J.-L.
CUTANEOUS CANCERIZATION OF THE MOUSE BY MEANS OF THE TAR OF CIGARETTE SMOKE (NEW RESEARCH). [1962] 24p. (figs. omitted) 9 refs.
Order from SLA $2.60 63-16697

Trans. of Association Française pour l'Étude du Cancer Bull[etin] 1958, v. 45, p. 400-416.
Another trans. is available from K-H $30.00 as K-H-9061 [1962] 24p.

DESCRIPTORS: *Skin, *Cancer, *Cigarettes, Smokes, Toxicity, *Tar, *Carcinogenic agents.

By using a concentrated tar of cigarette smoke, prepared by an original physical method, and by direct applications on the skins of mice, confirmation was had of its carcinogenic activity. A total of 37 cutaneous tumors -- 13 papillomas and 24 epitheliomas were observed in 172 mice who lived beyong 7 months. This amounts to 21.5% of the cases. These cancers were accompanied by metastases, of a mixed epitheliomatous and sarcomatous type in one case. One of the epitheliomas was grafted successfully. The 2 varieties of cigarettes used showed a certain difference in tars from the point of view of toxicity and of carcinogenic activity on the skin. A slight proliferative action was manifested on the bladder, but the appearance of spontaneous tumors was not favored on the whole. (Author)

Guerin, Maurice and Cuzin, Jean, L.
CUTANEOUS TESTS IN THE MOUSE FOR DETERMINING THE CARCINOGENIC ACTIVITY OF CIGARETTE SMOKE TARS. [1962] [13]p. 28 refs.
Order from SLA $1.60 63-16696

Trans. of Association Française pour l'Étude du Cancer. [Bulletin] 1961, v. 48, p. 112-121.
Another trans. is available from K-H $16.25 as K-H 11279-g [1962] 13p.

DESCRIPTORS: *Skin, *Cancer, Etiology, *Cigarettes, *Tobacco, *Smokes, Tar.

Two cutaneous tests in the mouse for evaluating the carcinogenic power of condensates of tobacco smoke are discussed. One, called "the sebaceous test" is inspired by the technique of Smith (Bull. New York Acad. Med. 32: 77, 1956), based on the disappearance of the sebaceous glands of the skin under the influence of the classical tumorigenic hydrocarbons. The other is a new test called "the hyperplasia test". It is based on the degree of thickening of the cutaneous epithelium. The results observed with very varied carcinogenic and non-carcinogenic substances, are not of an absolute specificity, but they prove that the tests are capable of furnishing interesting indications. The respective value of each of them requires further research in order to be made specific. (Author)

Haimbock, K.
THE INFLUENCE OF SMOKING ON THE RETINAL ARTERIAL PRESSURE OF HEALTHY EXPERIMENTAL PERSONS. [1962] 10p. 23 refs.
Order from SLA $1.10 63-16902

Trans. of Wiener Klinische Wochenschrift (Austria) 1961, v. 73, no. 31/32, p. 529-531.
Another trans. is available from K-H $12.50 as K-H 11548-c [1962] 10p.

DESCRIPTORS: *Tobacco, *Retina, *Arteries, Blood pressure, Smokes, Cigarettes.

On 50 clinically healthy test persons the vasoconstrictor effect of the nicotine could be demonstrated with the functional dynamometry according to Weigelin on the peripheral intracranial vessels. The result is highly significant statistically. With four of the persons investigated a similar result could be obtained on repetition of the smoking test on four further days, and with four other persons a distinct slackening of the vasoconstrictor effect of the nicotine could be detected after the smoking of 5 cigarets. (Author)

Hirvonen, Leo, Paavilainen, T. O. A., and Peltonen, Tuomas.
SMOKING AND FLICKER FUSION THRESHOLD. [1962] 8p. 12 refs.
Order from SLA $1.10 63-16903

Trans. of Sotilaslaak[etieteellinen] Aikak[auslehti] (Finland) 1961, v. 36, p. 62-68.
Another trans. is available from K-H $10.00 as K-H 11517-b [1962] 8p.

DESCRIPTORS: *Smokes, Tobacco, *Visual thresholds, Cigarettes.

Flicker fusion frequency was studied in 44 healthy conscripts in connection with smoking. When the determination was made only once before and once after smoking, a lowered value was noticed in 14 persons, no change in 3, and an increased value in 3 persons after they had smoked two cigarettes. When the determination was repeated at 5-minute intervals, all 20 subjects showed a lower value. The maximum change, averaging 4.2%, appears, on the average, 18 (8 - 36) minutes from the start of smoking, and the initial value after that was reached in 70 (38 - 106) minutes after the start of smoking. (Author)

Hirvonen, Leo, Paavilainen, T. O. A. and others.
SMOKING AND VASODILATION CAUSED BY TOPICAL HEAT APPLICATIONS. [1962] 11p. 13 refs.
Order from SLA $1.60 63-16906

Trans. of Sotilaslaak[etieteellinen] Aikak[auslehti] (Finland) 1961, v. 36, p. 69-78.
Another trans. is available from K-H $13.75 as K-H 11433-b [1962] 11p.

DESCRIPTORS: *Tobacco, Cigarettes, *Blood vessels Dilation, Heat treatment, Smokes.

The effect of smoking on the vasodilation of the skin of the lower extremities, when one of the arms was heated, was investigated by measuring toe skin temperatures of 44 conscripts. It was noticed, that smoking prevented vasodilation in 10 cases and slowed it down in 14 cases. In 10 cases the results were the same, and in 10 subjects the temperature rise after smoking was faster than in the control test. (Author)

Hunziker, A. and Buhlmann, A.
THE INFLUENCE OF CIGARETTE SMOKING ON THE RESPIRATION RESISTANCES. [Feb 61] 8p. 17 refs.
Order from SLA $1.10 63-16070

Trans. of Allergie und Asthma (East Germany) 1960, v. 6, no. 3, p. 145-149.
Another trans. is available from K-H $10.00 as K-H-10573-b, Feb 61, 8p.

DESCRIPTORS: *Tobacco, *Cigarettes, Respiration, *Respiratory system, Smokes, Toxicity.

In seven tested persons with sound lungs and heart and in 23 patients suffering from chronic spastic bronchiale the respiration resistances were measured by means of the esophagus pressure measuring method and pneumotachography before and after each of them had smoked a filterless cigarette. In 15 of the total of 30 cases the flow resistance was clearly increased. From these results it is concluded that the smoking of cigarettes can cause an acute increase of the flow resistances in the respiratory tract. (Author)

Kaindl, F.
THE PROBLEM OF THE NICOTINE EFFECT. [1962] 15p. 59 refs.
Order from SLA $1.60 63-16651

Trans. of Wiener Zeitschrift fur Innere Medizin [und ihre Grenzgebiete] (Austria) 1958, v. 39, p. 334-339.
Another trans. is available from K-H $18.75 as K-H 9331-d [1962] 15p.

DESCRIPTORS: *Nicotine, Cigarettes, Smokes, Tobacco, Diseases, Heart, *Blood circulation.

Kalaci, S.
THE ROLE OF CIGARETTES IN ARTERIAL OBLITERANS DISORDERS OF THE INFERIOR MEMBERS. [Nov 60] 4p.
Order from SLA $1.10 63-16891

Trans. of Méd[ecine] et Hyg[iene] (Switzerland) 1960 [v. 18] [0 May, p. 355.
Another trans. is available from K-H $5.00 as K-H-10413, Nov 60, 4p.

DESCRIPTORS: *Arteries, Diseases, *Cigarettes, Tobacco, Smokes, *Blood circulation.

A study was made of the effects of cigarettes on blood flow in members afflicted with arteriosclerosis. In six patients there was no appreciable difference in blood flow before and after smoking a cigarette. (Author)

Kaufmann, H. P. and Schmidt, G.
FAT INTAKE AND CIRCULATORY DISEASES. 1 Feb 57, 24p. 80 refs.
Order from SLA $2.60 63-16392

Trans. of Fette Seifen Anstrichmittel (West Germany) 1956, v. 58 [no. 10] p. 879-885.

DESCRIPTORS: *Fats, *Cardiovascular system, Diseases, Diet, Food, *Cholesterol, Blood vessels, Bibliographies.

Keil, R.
A FEW REMARKS ON CANCER STATISTICS. [Sep 60] 4p. 1 ref.
Order from SLA $1.10 63-16108

Trans. of Z[eitschrift für] Ärztl[iche] Fortbild[ung] (East Germany) 1960, v. 54, no. 4, p. 214-215.
Another trans. is available from K-H $5.00 as K-H 10177-c, Sep 60, 4p.

DESCRIPTORS: *Cancer, *Statistical data.

Keutzer, A.
STATISTICAL VIEWPOINTS ON THE QUESTION OF MORTALITY FROM LUNG CANCER. [1962] 35p. 30 refs.
Order from SLA $3.60 63-16005

Trans. of Ärztliche Mitteilungen (West Germany) 1955 [v. 40] no. 14, p. 417-427.
Another trans. is available from K-H $16.25 as K-H 6801-a [1962] 13p.

DESCRIPTORS: Vital statistics, *Cancer, *Lungs, Etiology, Cigarettes.

While general mortality, mortality by tuberculosis, etc. has considerably decreased since the turn of the century, the mortality from heart diseases and cancer has increased. This is manifested especially in the case of bronchial carcinoma, for which a 10 to 20 fold increase has been reported in some countries since 1900. This fact, the considerable difference in the mortality between men and women, the simultaneous increase in cigarette consumption and other factors were motives for suspecting a relationship between smoking and bronchial carcinoma. Several investigations affirm, just as many deny such a relationship. The change in the population's distribution from 1900 to 1952 alone causes an increase of the mortality by over 70 per cent. These conditions have to be taken into consideration as well as the improvement of the diagnosis. In the case of sudden deaths, the diagnosis "lung tuberculosis" suggested itself for the age groups in question sooner than "bronchial carcinoma" around 1900 and subsequently. It is probable that under the diagnoses "pneumonia", "lung tuberculosis", "unknown causes of death", "decrepitude" a large number of bronchial carcinomas were hidden. Recent investigations confirm that bronchial carcinomas are frequently diagnosed for lung tuberculoses even today, and they are treated as such. It is supposed that practically no increase took place in the case of lung carcinomas either.

Khvilivitskaya, M. I. and Magaril, M. Yu.
THE INCIDENCE, MORTALITY, AND DISABILITY RATE IN CORONARY ATHEROSCLEROSIS. [1962] [13]p. 4 refs. FASEB manuscript no. S 301-2.
Order from OTS or SLA $1.60 63-23018

Trans. of Terapevticheskii Arkhiv (USSR) 1962, v. 34, no. 8, p. 53-59.

DESCRIPTORS: *Vital statistics, *Atherosclerosis, Blood circulation, Heart.

Clinical statistics reveal certain patterns in coronary atherosclerosis morbidity and sequelae. Although the figures relate to only one town and one year, they give a fair indication of the importance of coronary pathology in general as a cause of death and disability. The accumulation of such data in the future can constitute an important landmark in the prophylaxis of coronary atherosclerosis. (Author)

Kolar, M., Sava, J., and Budesinska-Komarkova, M.
CHANGES IN THE BLOOD SUPPLY TO THE MUSCLES OF THE DISTAL EXTREMITIES AFTER PHYSICAL EFFORT COMBINED WITH SMOKING. [Feb 61] 6p. 7 refs.
Order from SLA $1.10 63-16656

Trans. of Sborn[ik] Lek[arsky] (Czechoslovakia) 1960, v. 62, p. 185-188.
Another trans. is available from K-H $7.50 as K-H 10643-b, Feb 61, 6p.

DESCRIPTORS: *Blood circulation, *Muscles, *Exercise, *Tobacco, Cigarettes, Smokes.

A study was made of the effect of cigarette smoking on the blood supply to the shank muscle by means of escape curves of the isotope Na^{24}. In healthy volunteers the combined load-physical work and smoking - does not change the escape curves. In patients suffering from Buerger's disease, however, the slope of the curve is lowered, under identical conditions. Without simultaneous loading by smoking, the curve is changed only slightly in some cases. (Author)

Komendantov, G. and Kopanev, V.
MOTION SICKNESS: PROPHYLAXIS AND TREATMENT. 2 Apr 63 [6]p. FTD-TT-63-287; AD-402 444.
Order from OTS or SLA $1.10 63-19965

Unedited rough draft trans. from Meditsinskaya Gazeta (USSR) 1962 [v. 25] 5 Dec, p. 3.

DESCRIPTORS: *Motion sickness, Ear, *Parasympatholytic agents, Exercise, Therapy.

Kozlov, G. S.
ASSESSMENT OF MYOCARDIAL FUNCTION DURING A PRIMARY ATTACK OF RHEUMATISM AND CHRONIC TONSILLITIS BY MEANS OF THE BALLISTOCARDIOGRAPH. [1963] [11]p. 12 refs. FASEB manuscript no. S408-2.
Order from OTS or SLA $1.10 63-23037

Trans. of Terapevticheskii Arkhiv (USSR) 1962, v. 34, no. 10, p. 64-69.

DESCRIPTORS: *Heart, Physiology, *Rheumatic diseases, *Tonsillitis, *Ballistocardiography, Diagnosis.

During a primary attack of rheumatism, in most patients with evident carditis a disturbance of the contractile power of the myocardium was revealed by ballistocardiography. These disturbances were brought to light more frequently by means of the physical exertion test. The degree of abnormality of the BCG increases with the severity of the myocardial lesion. In patients with chronic tonsillitis, pathological BCGs were recorded mainly in those with a past history of rheumatic polyarthritis or with an existing indolent form of rheumatic carditis. The changes in the BCG are an additional objective sign indicating involvement of the myocardium in the pathological process during the rheumatic attack. (Author)

Larina, V. S.
OXYGEN DEFICIENCY IN PATIENTS WITH MYOCARDIAL INFARCTION. [1963] [12]p. 9 refs. FASEB manuscript no. S 285-2.
Order from OTS or SLA $1.60 63-23008

Trans. of Kardiologiya (USSR) 1962, v. 2, no. 2, p. 74-76.

DESCRIPTORS: *Hypoxia, Blood circulation, *Heart, Blood vessels, *Thrombosis, *Necrosis, Tissues (Biology), Oxygen consumption.

Arterial and venous hypoxemia was observed in patients with myocardial infarction at all stages of the disease, especially during the acute phase. Half of the patients were found to have desaturation of the oxygen-carrying capacity of the blood. The arteriovenous oxygen difference and the coefficient of oxygen consumption were abnormally high in half of the patients,

indicating an elevated consumption of oxygen and suggesting that the tissues were in a state of oxygen hunger. The oxygen deficiency is somewhat relieved during later (subacute and post-infarction) phases of the illness, but persists in some of the patients in spite of apparent clinical improvement, indicating that there are profound alterations in the oxygenating system which persist even after 2 to 3 months. (Author)

Lundberg, W. O.
DIETARY PROBLEMS IN THE FIELD OF LIPIDS. [1963] 12p. 22 refs.
Order from SLA $1.60 63-16494

Trans. of Fette Seifen Anstrichmittel (West Germany) 1957, v. 59, no. 10, p. 811-814.

DESCRIPTORS: *Lipids, *Fats, *Diet, *Atherosclerosis, Cholesterol, Blood vessels.

The article is a general review of the present status of our knowledge concerning the part lipids are playing in the origin of atherosclerosis. The conclusion is that thus far, no proof exists that the influence of different kinds of dietary fats have on the plasma cholesterol level and on the development of vessel damages by atherosclerosis has any connection with the classical effect of essential fatty acids. A research program is described in which dwarf pigs were used to study the connection of dietary lipids to the blood cholesterol and to the pathology of vessel systems. (Author)

Mazurenko, N. P.
ROLE OF VIRUSES IN THE ETIOLOGY OF LEUCOSES: CHAPS. 6-7. 15 July 63, 35p. JPRS: 20169.
Order from OTS $1.00 63-31284

Trans. of mono. Rol'Virosov v Etiologii Leikozov, Kiev, 1962, p. 148-190.

DESCRIPTORS: Viruses, Etiology, *Leukemia, *Tumor viruses, Smallpox, *Vaccines, *Antigen-antibody reactions.

Contents:
Mechanism of smallpox vaccine-induced leucoses in mice
Viral etiology of human leucoses.

Nikitin, Yu. P.
THE EFFECT OF VITAMIN E ON LIPIDS AND BLOOD COAGULABILITY IN PATIENTS WITH ATHEROSCLEROSIS. [1963] [18]p. 44 refs. FASEB manuscript no. S 63-3.
Order from OTS or SLA $1.60 63-23055

Trans. of Voprosy Pitaniya (USSR) 1962, v. 21, no. 6, p. 22-27.

DESCRIPTORS: *Vitamin E, Lipids, *Atherosclerosis, *Blood coagulation, Heparin, Cholesterol, Hematology.

Lipid metabolism was studied in 37 patients with different, but mostly coronary, symptoms of atherosclerosis, 32 in the hospital, 14 on an outpatient basis. Soviet produced vitamin E was administered to 26 persons in a daily dose of 50 mg of tocopherol. Eleven persons were administered the Czech vitamin E, Erevit, in the form of daily intramuscular injections of 60 and 90 mg of tocopherol. The course of treatments ranged from 7-15 days for most of the patients and from 16-35 days for 7 patients. Vitamin E treatment of patients with atherosclerosis and high blood cholesterol level somewhat lowered the cholesterol level and raised the phospholipid-cholesterol ratio in more than half the cases. These changes were observed only during the time that the vitamin was administered. Deviations in the concentration of phospholipid and ketone bodies were irregular. Recalcification time of oxalate plasma and heparin tolerance of the plasma did not change whether the period of vitamin E treatment was brief or prolonged. (Author)

Panov, A. G.
CURRENT STATE OF THE TICK-BORNE ENCEPHALITIS PROBLEM AND THE NEED FOR FURTHER RESEARCH. [1963] [43]p. 147 refs. FASEB manuscript no. S 398-2.
Order from OTS or SLA $4.60 63-23030

Trans. of Zhurnal Nevropatologii i Psikhiatrii (USSR) 1962, v. 62, no. 3, p. 321-332.

DESCRIPTORS: *Ticks, *Disease vectors, Epidemiology, Vital statistics, Viruses, Encephalitis viruses, *Encephalitis.

Rogover, A. B. and Bronshtein, L. E.
STATISTICAL DATA ON CERTAIN PROBLEMS OF MULTIPLE SCLEROSIS (Staticheskie Dannye po Nekotorym Voprosam Mnozhestvennogo Skleroza). [1963] [18]p. FASEB manuscript no. S 291-2.
Order from OTS or SLA $1.60 63-23010

Trans. of Klinicheskaya Meditsina (USSR) 1962, v. 40, no. 9, p. 35-40.

DESCRIPTORS: Statistical analysis, *Multiple sclerosis, Etiology, Age, Sex.

The relationships between multiple sclerosis and such factors as age, sex, vocation, infections, and truama were studied by statistical analysis of 920 cases. These patients were hospitalized form 1945 through 1959. The results indicate: (1) Men and women are equally affected by the disease; (2) The largest number of cases are found in the age group of 20 to 40; (3) Women under 31 contract the disease more often than men; (4) After 35 the disease occurs more frequently in men; (5) Remissions occur in 63% of the cases; They are of short duration, one year or less; (6) Infections, truama, pregnancy, and parturition were not found to be causes of multiple sclerosis; they may be aggravating factors to an existing or latent disease process.

Savouret, J.
THREE CASES OF URINARY INFECTIONS DUE TO PATHOGENIC ESCHERICHIA COLI (SEROTYPE 119 B14, 111 B4 AND 55 B5). [1963] 6p.
Order from SLA $1.10 63-16539

Trans. of Concours Medical (France) 1961, v. 83, 29 July, p. 4067-4069.

DESCRIPTORS: *Escherichia, *Urinary system, *Infections, Bacteria, Children, Colimycin.

Slavutskii, Ya. L., Zhil'tsov, A. N. and others.
CERTAIN PHYSIOLOGICAL DATA AND PREREQUISITES FOR THE DEVELOPMENT OF A BIOELECTRIC PROSTHESIS OF THE FEMUR [AND] ELECTROMYOGRAPHIC INVESTIGATIONS OF THE MUSCLES OF THE SHIN AND FOOT UNDER VARIOUS CONDITIONS OF STATICS. 10 July 63, 23p. 9 refs. JPRS: 20103.
Order from OTS $0.75 63-31246

Trans. of Protezirovanie i Protezostroenie (USSR) 1962, no. 6, p. 5-13, 43-49.

DESCRIPTORS: Physiology, *Bioelectronics, *Prosthetics, Femur, *Kymography, Muscles, *Legs.

Timofeevskii, A. D.
TISSUE CULTURE IN THE STUDY OF SOME ONCOLOGICAL PROBLEMS. [1962] [16]p. 30 refs. FASEB manuscript no. S 358-2.
Order from OTS or SLA $1.60 63-19027

Trans. of Akademiya Meditsinskikh Nauk SSSR. Vestnik, 1962, v. 17, no. 6, p. 17-23.

DESCRIPTORS: *Culture media, *Tissues (Biology), *Cancer, Cells (Biology).

Four trends of research in oncology are reviewed: (1) the production and study of cell strains from normal and neoplastic human tissues; (2) virological investigations; (3) malignant transformation of cultivated cells and tissues; and (4) the study of the antigenic properties of certain strains of human cells. A new technique for cultivating cell strains was discussed, and the adaptability of the cells was noted. Studies of oncogenic viruses were presented. The morphology of tissue cultures was described.

Zarubin, S. A.
THE LATE RESULTS OF TREATMENT OF VARICOSE VEINS. [1963] [16]p. 10 refs. FASEB manuscript no. S 431-2.
Order from OTS or SLA $1.60 63-23042

Trans. of Klinicheskaya Meditsina (USSR) 1962, v. 40, no. 10, p. 86-94.

DESCRIPTORS: Therapy, *Varicose veins, Surgery, Excision.

Zolochevskii, M. A., and Nikitin, V. M.
C-REACTIVE PROTEIN AND ITS IMMUNOLOGICAL IMPORTANCE IN IMMUNIZATION WITH THE NIISI POLYVACCINE, COMMUNICATION I: THE DURATION OF C-REACTIVE PROTEIN RETENTION AND ITS CORRELATION WITH NONSPECIFIC INDICES OF THE PHYSIOLOGICAL STATE OF THE BODY FOLLOWING AN IMMUNIZATION WITH THE NIISI POLYVACCINE (C-reaktivnyi Belok i Ego Immunologicheskoe Znachenie pri Immunizatsii Polivaktsinoi NIISI. Soobshchenie I. Prodolzhitel'nost' Obnaruzheniya C-reaktivnogo Belka i Sootnochenie Ego s Nespetsificheskimi Pokazatelyami Fiziologicheskogo Sostoyaniya Organizma pri Immunizatsii Polivaktsinoi NIISI). 7 Jan 63, 11p. refs. Trans. V-1813.
Order from OTS or SLA $1.60 63-15463

Trans. of #Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii (USSR) 1962, v. 33, no. 11, p. 106-110.

DESCRIPTORS: *C-reactive protein, Blood proteins, Immunology, *Immunity, *Vaccines, Physiology, Antigens and antibodies, Antigen-antibody reactions, Erythrocytes.

Pharmacology and Toxicology

COLIMYCIN IN PEDIATRICS (La Colimicina en Pediatría). [1963] 6p. 10 refs.
Order from SLA $1.10 63-16528

Trans. of Actualidad Pediatrica (Spain) 1961, v. 20, July p. 1-6.

DESCRIPTORS: *Colimycin, *Antibiotics, *Pediatrics, Therapy, Dosage, Escherichia, Toxicity, Physical properties, Chemical properties.

PROCESS FOR THE PREPARATION OF SOLID SALTS OF SULFURIC ACID. [1963] 2p.
Order from OTS or SLA $1.10 63-16305

Trans. of French patent 701,187 [1931].

DESCRIPTORS: *Sulfuric acid, Salts, Fatty acids, *Stearic acids, Oleic acids, *Sulfonation, Synthesis (Chemistry), Drugs, Preparation.

The invention concerns a process for the production of solid salts of sulfuric acid derivatives of substances having more than nine carbon atoms or their derivatives distinguished by the fact that the neutralization of the sulfonation product is carried out by means of organic or inorganic bases or the salts of the latter with weak acids, said neutralizing agents being used as anhydrous solids, liquids or gases. Sulfonating agents which do not produce reaction water are employed. The which do not produce reaction water are employed. The sulfonation is carried out in the presence of neutral solvents.

PROCESS FOR THE PRODUCTION OF NEW DISUBSTITUTED AMIDES. [1962] 6p. 3 refs.
Order from OTS or SLA $1.10 62-16239

Trans. of Austrian patent 168,059, cl. 12 e_2, by Österreichische Stickstoffwerke Aktiengesellschaft, appl. 15 July 49, beginning of pat. term 15 Sep 50, pub. 10 Apr 51.

DESCRIPTORS: *Amides, Production, Organic acids, Alkoxy radicals, Benzoic acids, *CNS stimulants, Pharmacology.

Balik, J., Pavlova, D., and Urbanova, S.
THE INFLUENCE OF NICOTINE UPON THE TEAR EXCRETION OF SMOKERS. [1963] 7p. 3 refs.
Order from SLA $1.10 63-16925

Trans. of Cas[opis] Lek[aru] Cesk[ych] (Czechoslovakia) 1958, v. 97, no. 5, p. 1553-1555.

DESCRIPTORS: *Nicotine, *Cigarettes, Tobacco, Smokes, Excretion, *Eye, Toxicity.

The examination of the quality and quantity of tears of 30 smokers, by means of the glucose test showed that the tear excretion does not change after successive smoking of 2 cigarettes; not in quantity and not in quality. Conjunctival difficulties are usually provoked by the physical and chemical properties of smoke. (Author)

Benincasa, T. and Moiraghi-Ruggenini, A.
TRANSPULMONARY ABSORPTION OF COLIMYCIN IN THE ADULT INDIVIDUAL (L'Assorbimento Transpolmonare della Colimicina nell'Individuo Adulto). [1963] 6p. 11 refs.
Order from SLA $1.10 63-16504

Trans. from Minerva Otorinolaringolog[ica] (Italy) 1961, v. 11, Oct, p. 392-394.

DESCRIPTORS: *Absorption (Physiology), *Colimycin, Antibiotics, Drugs, Lungs, *Aerosols.

Bessho, Tametoshi and Betsusho, Tomeyoshi.
ON THE DEVELOPMENTAL ABNORMALITIES PRODUCED BY NORNICOTINE IN CHICKEN EMBRYOS. [1963] 33p. 28 refs.
Order from SLA $3.60 63-16604

Trans. of Nihon Yakurigaku Zasshi (Japan) 1960, v. 56, no. 5, p. 1223-1234.
Another trans. is available from K-H $41.25 as K-H-11627-j [1962] 33p.

DESCRIPTORS: *Nicotine, Chickens, *Embryos, Anomalies.

Chicken embryos were affected by nornicotine as follows: (1) The allantoic fluid was reduced remarkably. (2) The body weights were always very low. (3) The decrease of the weight of the leart, liver, lungs and spleen was very remarkable, but that of the brain was not so great. (4) The weight of the thyroid gland on the 15th day was greater than that of the control group, but on the 18th and 21st days they were less than that of the control group. (5) In most cases, the kidneys were small, but were bigger than those of the control group on the 18th day. (6) Edema, Pygmy embryo, deformation of the spinal column, protrusion of the viscera, stiffness of the joint, bowleg and underdevelopment of the down were observed. (7) Their body, neck and leg were short, but the decrease of the length of the leg was small. (8) Their X-rays of the bone bear a close resemblance to those of osteogenesis imperfecta. (Author)

Bouchet and Labayle.
TOBACCO POISONING AND THE VIIIth PAIR. [1963] 10p. 10 refs.
Order from SLA $1.10 63-16605

Trans. of Ann[ales] d'Oto-Laryng[ologie] (France) 1948, v. 65 [no. 3/4] p. 137-142.

DESCRIPTORS: *Tobacco, Smokes, *Poisoning, Nervous system, *Auditory nerve, Toxicity, Pathology, Hearing.

Observations on the effect of tobacco on the cochleovestibular system are reported.

Caffi, M. and Paganoni, C.
THE ACTION OF VITAMIN B_{12} AND OF ONE OF ITS ANALOGUES IN TOXIC ALCOHOLIC-TABAGIC NEURITISES. [1963] 13p. 18 refs.
Order from SLA $1.60 63-16614

Trans. of Annali di Ottalmologia e Clinica Oculistica (Italy) 1960, v. 86, p. 87-97.

DESCRIPTORS: *Vitamin B complex, *Addiction, *Cigarettes, Smokes, Tobacco, *Nerves, Diseases, Therapy.

An experimental study was made of the histopathological alterations produced in the optic nerve of the rabbit by alcoholic-tabagic intoxication. The simultaneous administration of large doses of vitamin B_{12}, or of its analogue C_{56}, proved to be capable of preventing or arresting the appearance of the alterations.

Chabbert, Y., Monnier, J. and others.
COLISTIN (Colistine). [1963] 8p.
Order from SLA $1.10 63-16519

Trans. of Pathologie et Biologie (France) 1961, v. 9, no. 21/22, p. 2123-2125.

DESCRIPTORS: Antibiotics, *Colimycin, Drugs, Communicable diseases, Toxicity, Tolerances (Physiology), Sensitivity, Biological assay.

Topics inclued: In vitro activity and humoral concentrations; bactericidal activity; resistance to colistin; effect of combinations; humoral concentrations; and clinical effects of colistin in infantile gastroenteritis, in urinary infections, and in meningitis, septicemia, and endocarditis.

Chabbert, Y. and Courtieu, A.-L.
SENSITIVITY TO ANTIBIOTICS OF PSEUDOMONAS, ACHROMOBACTER AND "B5W-BACTERIUM ANITRATUM" (La Sensibilite aux Antibiotiques des Pseudomonas, Achromobacter and "B5W-Bacterium Anitratum"). [1963] 15p. 41 refs.
Order from SLA $1.60 63-16511

Trans. of Inst[itut] Pasteur, Paris. Ann[ales] (France) v. 100, no. 6, suppl. p. 100-113.

DESCRIPTORS: *Sensitivity, *Antibiotics, Bacteria, *Pseudomonas, *Eubacteriales, Tolerances (Physiology).

From a therapeutic standpoint, Pseudomonas, B5W, B. anitratum, Moraxella lwoffi and M. Glucidolytica are sensitive to antibiotics of the polymyxin family. Among them Colistin methanesulfonate, of slight toxicity, is capable of having an important therapeutic effect. All these bacterial groups contain an important percentage of strains resistant to streptomycin. Broad-spectrum antibiotics and sulfamides are often bacteriostatic but of low bactericidal effect. The effect of antibiotics provides some elements utilizable in the determination of their toxonomic position. (Author)

Czochra-Lysanowicz, Zofia, Gorski, Michal and Kedra, Mieczyslaw.
THE INFLUENCE OF NICOTINE AND CAFFEINE ON THE DEVELOPMENT OF ARTERIOSCLEROSIS IN RABBITS. [1963] [31]p. 33 refs.
Order from SLA $3.60 63-16607

Trans. of Uniw[ersytet Marii] Curie-Sklodowskiej. Ann[ales]. Sectio D: Medicina (Poland) 1959, v. 14, no. 20, p. 181-206.
Another trans. is available from K-H $31.25 as K-H-10938-a [1962].

DESCRIPTORS: *Nicotine, *Caffeine, *Arteriosclerosis, Rabbits, Pathology.

Danysz, A. and Dmochowski, J.
THE EFFECTS OF TOBACCO SMOKE ON STRIATED MUSCLE ACTIVITY. [1963] 2p. [refs. omitted].
Order from SLA $1.10 63-16960

Trans. of Acta Physiologica Polonica, 1957, v. 8, no. 3/3a, p. 308-309.

DESCRIPTORS: *Tobacco, *Smokes, *Muscles, Tissues (Biology), Toxicity, Musculoskeletal system.

Davidovskii, N. M.
CLINICAL TRIALS OF THE NEW GANGLIO-BLOCKING AGENT KVATERON IN THE TREATMENT OF ANGINA PECTORIS. [1963] [9]p. 1 ref. FASEB manuscript no. S 407-2.
Order from OTS or SLA $1.10 63-23036

Trans. of Terapevticheskii Arkhiv (USSR) 1962, v. 34, no. 10, p. 55-58.

DESCRIPTORS: *Autonomic agents, *Angina pectoris, *Antispasmodic agents, Drugs, Therapy.

Kvateron is an effective drug for the treatment of angina pectoris in both in-patients and out-patients. It is less effective in the treatment of anginal patients in whom the angina is complicated by chronic cholecystitis, peptic ulcer, etc. It may cause an "overdosage syndrome." To prevent this, it is recommended that: (1) the individual dose should not exceed 0.02 g; (2) the daily dose should not exceed 0.06-0.08 g; and (3) after 3 weeks of treatment there should be an interval. Kvateron has a slight hypotensive action, but does not adversely affect the serum cholesterol level. (Author)

Denys, Annette, Levy, Jeanne and Michel-Bar, Estera.
INHIBITION BY VARIOUS ADRENOLYTIC OR SYMPATHOLYTIC AGENTS OF THE DEPRESSIVE ACTIONS OF ADRENALIN, NORADRENALIN, AND NICOTINE ON ISOLATED RAT DUODENUM. [1962] 15p. 13 refs.
Order from SLA $1.60 63-16954

Trans. of Therapie (France) 1960, v. 15, no. 2, p. 297-305.
Another trans. is available from K-H $19.75 as K-H 10454-a [1962] 15p.

DESCRIPTORS: Inhibition, Drugs, *Epinephrine, Adrenal glands, Secretion, *Autonomic nervous system, *Nicotine, *Intestine, Rats.

Experimental conditions were established in which five substances which are generally adrenolytic (yohimbine, ergotamine, dibenzmine dibenzyline, tolazoline) can inhibit the depressive action of adrenalin, noradrenalin, and nicotine on isolated rat duodenum. Yohimbine proved to be the substance which is most regular in its antagonism to adrenalin, noradrenalin, and nicotine in concentrations varying from 2 to 5 x 10^{-7}, and the easiest substance to administer several times in succession, its action being reversible. The analogy between the adrenolytic, noradrenolytic and antinicotinic effects is evidence of the adrenergic nature of the depressive action of nicotine on isolated rat duodenum. (Author)

Dovgyallo, G. Kh. and Gorbachev, V. V.
THE TREATMENT OF ATHEROSCLEROSIS. [1963] [15]p. 67 refs. FASEB manuscript no. S 406-2.
Order from OTS or SLA $1.60 63-23035

Trans. of Terapevticheskii Arkhiv (USSR) 1962, v. 34, no. 10, p. 50-55.

DESCRIPTORS: Therapy, *Atherosclerosis, Drugs, Cholesterol.

A comparative study was made of the effect of the following substances on the changes in the concentrations of cholesterol, lecithin, and protein and lipoprotein fractions in patients with atherosclerosis: sunflower oil, pyridoxin, vitamin B_{12} and folic acid, ascorbic acid and rutin, choline chloride, lipocaic, tincture of iodine, ascorbic acid and choline chloride, and ascorbic acid and rutin. The most favorable changes in the blood serum of the atherosclerotic patients took place after administration of ascorbic acid in conjunction with choline chloride, ascorbic acid in conjunction with lipocaic, and ascorbic acid in conjunction with rutin. Next in order to decreasing merit were sunflower oil, pyridoxin, vitamin B_{12} in conjunction with folic acid, choline chloride, and lipocaic. The least effective of these preparations was tincture of iodine.

Fachini, Giuseppe.
PROCESS FOR TREATING TOBACCO AND CIGARETTE PAPER WITH THE AIM OF NEUTRALIZING COMPLETELY OR IN PART THE TOXIC EFFECTS OF THE TOBACCO AND OF THE PAPER THUS TREATED. [1962] 4p.
Order from OTS or SLA $1.10 63-16890

Trans. of Italian patent for Industrial Invention 530,211, cl. 25, appl. 3 Mar 54, granted 6 July 55 [printed Jan 58].
Another trans. is available from K-H $5.00 as K-H-10934-a, 1962.

DESCRIPTORS: *Paper, *Tobacco, *Cigarettes, Toxicity, Neutralization.

The invention involves a process for treating tobacco and cigarette paper with the aim of neutralizing the toxic effects of the smoke, characterized by the fact that it consists in intimately mixing with the tobacco, or adding to the paper, a substance of the group constituted of diphosphopyridine nucleotide and of triphosphopyridine nucleotide (cozymase I and II). (Author)

Frischauf, H. and Schnack, H.
STUDIES ON THE EFFECT OF DESFERRIOXAMINE (Untersuchungen zur Desferrioxaminwirkung). Feb 63, 7p. 3 refs.
Order from SLA $1.10 63-14718

Trans. of Wien[er] Klin[ische] W[ochenschrift] (Austria) 1962, v. 74, 16 Nov, p. 804-806.

DESCRIPTORS: Drugs, Chemotherapeutic agents, *Hemochromatosis, *Iron compounds, *Complex compounds, *Oximes *Chelate compounds, Excretion.

The effect of desferrioxamine (DF) on iron excretion was studied by means of radioactive iron. In in vivo measurements over bone marrow, liver and spleen, a temporary reduction of activity was found after infusion of DF. The observation that after DF infusion the calcium excretion sometimes increases, led us to carry out studies with radioactive calcium. Under DF there was a reduction of the specific activity in the urine, suggesting binding of absorbed calcium by DF and renal excretion. During infusion with DF in the majority of cases, a slight reduction of the plasma calcium level was found. (Author)

Genig, V. A.
ATTENUATED VARIANT "M" OF RICKETTSIA BURNETI AS POSSIBLE LIVE VACCINE AGAINST Q FEVER (Attenuirovannyi Variant "M" Rikketsii Berneta kak Vozmozhnaya Zhivaya Vaktsina Protiv Ku-Likhoradki) 26 Feb 63 [16]p. 16 refs. NIH no. 2-36-63.
Order from OTS or SLA $1.60 63-19096

Trans. of Akademiya Meditsinskikh Nauk SSSR. Vestnik, 1960 [v. 15] no. 2, p. 46-57.
Another trans. is available from OTS $0.50 as 60-11663, JPRS-2694, 4 Jun 60, 15p.

DESCRIPTORS: *Vaccines, Biological products, *Rickettsia, Mutations, *Q fever, *Immunity, Pathology, Antigens and antibodies, Culture media, Virus vaccines, Virus diseases, Complement,

The pathogenic and immunogenic properties of a variant of Rickettsia burneti designated as Grit-strain variant "M" were compared with those of the Grit strain variant "B" and Soviet strains of Rickettsia burneti. The cultural and pathogenic properties of the various strains were determined by inoculating guinea pigs, mice and rabbits with egg cultures grown on chick embryoes. The general and local reactions, the presence of the virus in the blood and body organs, the presence of specific complement-fixation antibodies, and the post-infection immunity were the criteria used in the comparative evaluation of the different strains of the organism. The variant "M" produced milder pathogenic reactions and higher immunogenic reactions than the Grit strain and Soviet strains 59, 388, and 396. Guinea pigs inoculated with variant "M" had milder clinical manifestations of disease than those inoculated with the variant "B". White mice were less susceptible to the variant "M" strain than to the variant "B" strain. Asymptomatic forms of the variant "M" strain infections were revealed in guinea pigs when the animals were given cortisone in conjunction with the inoculation.

Gerlach, E. and Deuticke, B.
THE EFFECT OF α-ISOPROPYL-α-[(N-METHYL-N-HOMOVERATRYL)-γ-AMINOPROPYL]-3,4-DIMETHOXYPHENYLACETONITRILE, A CORONARY DILATOR, ON THE CATABOLISM OF ADENINE NUCLEOTIDES IN THE MYOCARDIUM IN ANOXIA. [1963] 4p.
Order from ATS $5.50 ATS-15Q70G

Trans. of Arzneimittel-Forsch[ung] (West Germany) 1963, v. 13, no. 3, p. 177-178.

DESCRIPTORS: Drugs, *Cardioactive agents, Propyl radicals, Methyl radicals, Alkoxy radicals, Phenyl radicals, *Acetonitriles, *Anoxia, *Heart, Muscles, *Nucleotides, *Adenine, *Metabolism.

Giroud, A., Tuchmann-Duplessis, H., and Mercier-Parot, L.
OBSERVATIONS ON THE TERATOGENIC REPERCUSSIONS OF THALIDOMIDE IN MICE AND RABBITS (Observations sur les Repercussions Teratogenes de la Thalidomide la Thalidomide Chez la Souris et le Lapin). Apr 63, 4p. 5 refs.
Order from SLA $1.10 63-18015

Trans. of Soc[iété de] Biol[ogie et de ses Filiales]. C[omptes] R[endus des Séances] (France) 1962, v. 156, p. 765-768.

DESCRIPTORS: Drugs, *Thalidomide, Toxicity, *Anomalies, Laboratory animals, Hypnotics and sedatives.

Thalidomide, a hypnotic which is apparently well-tolerated by pregnant animals, disturbed pregnancy in the 3 species examined: rat, mouse and rabbit. In rats up to 60% total absorptions were observed; the average number of fetuses per litter was thus reduced by 2/3 compared to normal. In the two other species examined, mice and rabbits, thalidomide also caused a very great percentage of absorption and, in addition, produced teratogenic effects. In mice the frequency of fetal absorptions for the different strains ranged between 40 and 90%.

According to the dose, 5 - 10.5% of the surviving fetuses had apparent malformations: harelips, cleft palates, inability to close the lids, and torsions of the tail. In rabbits the lowest doses reduced the number of fetuses by 50%. Among the surviving, 30% presented severe anomalies. These concerned the brain: encephalocele and anencephalia, the skeletal system: axial torsion and limbs with malformations of the club foot type. These results serve as a new example of the danger which drugs, otherwise inoffensive for the mother can present for the embryo. The differences in reactions observed between rats and the two other species show the difficulties encountered in research on teratogenic factors. (Author)

Herz, Albert.
THE EFFECT OF ANTICHOLINERGIC, NICOTINOLYTIC AND ANTIHISTAMINIC AGENTS ON CENTRALLY SUPPRESSING AND EXCITING MORPHINE ACTIONS IN RATS. [1962] 27p. 49 refs.
Order from SLA $2.60 63-16900

Trans. of Naunyn-Schmiedeberg's Arch[iv für] Exp[erimentelle] Path[ologie und] Pharmak[ologie] (West Germany) 1961, v. 241, p. 236-253.
Another trans. is available from K-H $33.75 as K-H 11279-d [1962] 27p.

DESCRIPTORS: Drugs, Inhibition, *Acetylcholines, *Nicotine, *Vasomotor drugs, Nervous system, Reaction (Psychology), *Morphine, Antihistaminics

Scopolamine and similar substances intensify the sedative stupor-inducing action of morphine in the rat; simultaneously the rigidity of the skeletal muscle and the erection of the tail is inhibited. The cataleptic equivalents are not to be equalized with the effect of Bulbocapnin. The effect of Trihexyphenidyl, Benactyzine, Caramiphen, and other synthetic substances closely resembles that of Scopolamine and Atropine. These substances possess no sedative properties when administered alone--that is without Morphine. The most effective ones even lead to considerable psychomotoric excitation. The Scopolamine-induced increase in motility is observed after decortication. The structure of a series of substances tested is similar to that of the microsome-inhibiting agents SKF 525A and CFT 1201. Inhibition of Morphine metabolism as the potentiating mechanism can be excluded. Obviously the effect is of central origin. The effect established here shows no parallelism to the cholinolytic effect found on peripheral organs. There also is no direct relation to the central nicotinolytic potency. The effective agents belong to the so-called antiparkinson substances. The probable significance of such a site of drug action is discussed. (Author)

Gotlieb, José S. and Soroco, Mauricio.
THERAPEUTIC VALUE OF THE ANTIBIOTIC COLISTIN IN VARIOUS DERMATOLOGICAL AFFECTIONS (Valor Terapeútico del Antibiótico Colistin en Diversa Afecciones Dermatológicas). [1963] 3p.
Order from SLA $1.10 63-16520

Trans. of el Dia Méd[ico] (Argentina) 1961, v. 33, no. 26, p. 1324.

DESCRIPTORS: Antibiotics, *Colimycin, Drugs, Diseases, Skin, Toxicity, Sensitivity.

It was shown that colistin has a therapeutic value which places it alongside the first-rank antibiotics. The best results were obtained in the treatment of pustular acne, furunculosis, and anthrax; a significant improvement was observed in the microbial epidermodermitis. No sensitivity to the drug or pain on injection was found. (Author)

Homrowski, S. and Nikonorow, M.
TOXICITE AIGUE DU PHTALATE DE DIBUTYLE, AINSI QUE DU PHTALATE DE DI-2-ETHYLHEXYLE DE FABRICATION POLONAISE (Acute Toxicity of Dibutyl Phtalate and Bis(2-Ethylhexyl) Phtalate Manufactured in Poland). 11p. FX-27.
Order from OTS, ETC or CNRS $0.80 62-26524

Trans. in French from Roczniki Panstwowego Zakladu Higieny (Poland) 1959, v. 10, no. 4.

DESCRIPTORS: Butyl radicals, *Phtalates, Ethyl radicals, Hexanes, *Toxicity, *Plasticizers.

Il'inskii, Yu. A. and Kulikov, L. S.
IMMUNOLOGICAL REACTIVITY OF MENTAL PATIENTS FOLLOWING THERAPY WITH AMINAZINE, INSULIN, ETC (Ob Immunologicheskoi Reaktivnosti Psikhicheski Bol'nykh v Protsesse Lecheniya Aminazinom, Insulinom i dr) tr. by W. M. Feeley. Nov 60, 5p. (refs. omitted). PSC no. 59-969.
Order from OTS or SLA $1.10 62-24323

Trans. of Zhurnal Nevropatologii i Psikhiatrii (USSR) 1959, v. 59, no. 2, p. 156-159.

DESCRIPTORS: *Mental disorders, Therapy, Drugs, Psychotropic agents, *Chlorpromazine, *Insulin, *Reserpine, Psychoses, Psychiatry, Immunology, *Antigen-antibody reactions.

The properties of the dynamics of antitularemic immunity of psychotic patients treated with insulin, aminazine (chlorpromazine), reserpine and blood substitutes were studied and the results tabulated, according to the type of psychoses in the group. The agglutinin titers vaccinal reactions, and cutaneous reactions are compared for each group and each type of psychosis.

Kanevskaya, F. O., Tarasov, G. K., and Tsutusl'kovskaya, M. Ya.
SUPPORTIVE THERAPY WITH NEUROLEPTIC PREPARATIONS IN A PSYCHONEUROLOGICAL CLINIC (Podderzhivayushchaya Terapiya Neirolepticheskimi Preparatami v Usloviyakh Psikhonevrologicheskogo Dispansera) tr. by Wanda M. Feeley. Mar 61, 8p. PSC no. 60-1452.
Order from OTS or SLA $1.10 62-24314

Trans. of Zhurnal Nevropatologii i Psikhiatrii (USSR) 1960, v. 60, p. 242-247.

DESCRIPTORS: Therapy, Drugs, *CNS depressants, *Psychoses, *Neuroses, Psychiatry, *Chlorpromazine, Reserpine.

A study was made of 105 psychotic persons who were given supportive therapy of aminazine (chlorpromazine) or reserpine following hospital discharge. The length and quality of remissions and the frequency of relapses were tabulated for the various psychoses found in the group. This supportive therapy improved the quality and stability of remissions of patients with a chronic continuous type of schizophrenia. With therapy of 1 to 2 months after hospital discharge, relapses occurred in 2/3 of the patients. Continuation of the therapy for 6 to 12 months reduced the incident of relapses to 1/3. There were no relapses in this group when the therapy was continued for 2 or more years. In schizophrenia with a periodic course and in the manic-depressive psychoses, supportive therapy improved the quality of remissions. It did not prolong the periods of the remissions. The relapses were less acute and of shorter duration. This supportive drug therapy did not prevent relapses in schizophrenia with a periodic course and in the manic depressive psychoses.

Khruleva, L. N.
THE EFFECT OF AMINAZINE ON HIGHER NERVOUS ACTIVITY IN DOGS (O Vliyanii Aminazina na Vysshiyu Nervnuyu Deyatel'nost' Sobak) tr. by Wanda M. Feeley. Jan 61, 9p. (refs. omitted). PSC no. 60-1114.
Order from OTS or SLA $1.10 62-24316

Trans. of Zhurnal Nevropatologii i Psikhiatrii (USSR) 1960, v. 60, no. 5, p. 577-584.

DESCRIPTORS: *Chlorpromazine, Drugs, Pharmacology, Nervous system, *Brain, Dogs, *Cerebral cortex, *Conditioned reflex, Neuroses, CNS depressants, Psychotropic agents.

The effects of small doses of aminazine (chlorpromazine) on the higher nervous activity of animals were studied. Four dogs of differing types of nervous systems were used. The effects of the drug were measured by the changes in the conditioned reflexes and the differential inhibition of the individual animals. The data indicated that even very small doses of aminazine affected the cortical dynamics substantially. The amount of drug necessary to produce changes in the higher nervous activity varied in different animals. The character, intensity and duration of changes in higher nervous activity caused by aminazine depended on the amount of the dose and the typological peculiarities of the animal. Optimal doses of aminazine were administered to two dogs in which experimental neuroses had been induced. It was found in both animals that the coming out of the neurotic state depended completely on the administration of aminazine.

Klein, U. E.
PULMONARY TISSUE TRANSFORMATIONS BY TOBACCO SMOKE CONDENSATE IN ANIMAL EXPERIMENTS. [1963] 12p. (figs. omitted) 23 refs.
Order from SLA $1.60 63-16655

Trans. of Beiträge zur Tabakforschung [sic] 1962, no. 5, p. 180-185.

DESCRIPTORS: Tissues (Biology), *Lungs, *Tobacco, *Smokes, Laboratory animals, Toxicity, Cigarettes.

After an introductory literature survey on the question of inducing lung cancer in animal experiments by the direct inhalation of tobacco smoke or by intrapulmonary application of smoke condensates, a method is described for the single pertracheal introduction of smoke condensate into the peripheral sections of the bronchial system of rats. A histological examination of the lungs showed intrapulmonary foreign-body granulomas and squamous-cell metaplasias of the bronchial epithelium. The method utilized required a limitation of the quantity of substance applied, so that neoplastic reactions cannot be anticipated with certainty on the basis of present experiences in oncology, in spite of an experimental period of ten months. With reference to their probable, maximum possible, carcinogenic potency, the smoke condensate doses were lower by a factor of 10^2 than the dosage of purified carcinogens with which according to literature data it was possible to produce experimental bronchial carcinomas in the rat upon contact with the lung tissue. For reasons of methodology it might be advisable to utilize enriched or fractionated tobacco smoke condensates for future studies in the lung tissue. (Author)

Klyavina, M. P.
THE EFFECT OF CAFFEINE AND BROMINE ON THE PROCESS OF CONDITIONED REFLEX GENERALIZATION IN PUPPIES (Vliyanie Kofeina i Broma na Protsess Uslovnoreflektornoi Generalizatsii u Shchenyat) tr. by Wanda M. Feeley. Dec 61, 8p. (refs. omitted). PSC no. 60-2815.
Order from OTS or SLA $1.10 63-19706

Trans. of #Zhurnal Vysshei Nervnoi Deyatel'nosti (USSR) 1960, v. 10, no. 2, p. 274-279.

DESCRIPTORS: *Caffeine, *Bromine, *Conditioned reflex, Dogs, CNS stimulants, Drugs, Hypnotics and sedatives, Nervous system.

During the period of a narrow localization of the conditioned reflex to the tone (age: 15-30 days) the same dose of caffeine has different effect: in much earlier age it either has no effect at all or it decreases the value of a latent period of the conditioned reaction, while in much later age it evokes universal generalization. During the generalization period of conditioned reflex within the limits of an auditory analyzer definite doses of caffeine evoke in 5-6 month old puppies the extensive irradiation of excitation from an auditory analyzer into visual, olfactory, and tactile analyzers. Small, average, and large doses of bromine administered during the period of universal generalization of the conditioned reflex (age: 1-3 months) have no effect on the generalization process of stimuli. (Author)

Konikova, G. S.
CHOLESTROL METABOLISM IN SUSTAINED INTOXICATION BY CERTAIN INDUSTRIAL POISONS (LEAD, CARBON DISULFIDE, AND BENZENE). [1963] [13]p. 15 refs. FASEB manuscript no. S 302-2.
Order from OTS or SLA $1.60 63-23019

Trans. of Terapevticheskii Arkhiv (USSR) 1962, v. 34, no. 8, p. 96-102.

DESCRIPTORS: *Cholestrol, *Metabolism, *Poisoning, *Industrial medicine, Lead, Carbon compounds, Sulfides, Benzenes, Toxicity.

In persons exposed to lead, carbon disulfide and benzene, a disturbance in cholesterol metabolism was detected. In those exposed to lead and carbon disulfide, this disturbance took the form of a high total cholesterol level, weakening of the cholesterol-protein bond, and narrowing of the ratio between the total phospholipid level and the total cholesterol level and of that between protein-free phospholipid and protein-free cholesterol. In persons exposed to benzene, the disturbance in cholesterol metabolism took the form of a weakening of the cholesterol-protein bond, a narrowing of the ratio between protein-free phospholipids and protein-free cholesterol, accompanied by a normal total cholesterol level and a normal total phospholipid to total cholesterol ratio. Deviations from the normal were most pronounced, by nearly all cholesterol metabolism indices, in persons exposed to lead. Those in contact with carbon disulfide occupied an intermediate position between the lead and benzene groups. These results give grounds for assuming that the first stage of disturbance to cholesterol metabolism caused by certain industrial poisons is a weakening of the cholesterol-protein bond. (Author)

Krylov, O. A.
THE EFFECT OF BROMINE ON THE CONDITIONED REFLEX ACTIVITY IN INTACT AND DECORTICATED ANIMALS (Vliyanie Broma na Uslovnoreflektornuyu Deyatel'nost' Intaktnykh i Dekortitsirovannykh Krolikov) tr. by Wanda M. Feeley. Dec 61, 8p. (refs. omitted). PSC no. 60-2859.
Order from OTS or SLA $1.10 63-19705

Trans. of #Zhurnal Vysshei Nervnoi Deyatel'nosti (USSR) 1960, v. 10 [no. 3] p. 443-448.

DESCRIPTORS: *Bromine, *Conditioned reflex, *Bromides, Hypnotics and sedatives, *Cerebral cortex, Drugs, Brain.

The effect of bromine, administered into the organism with food, on the conditioned reflex activity is the same in intact as well as decorticated rabbits. Bromine concentration in the blood is the same in decorticated as well as intact rabbits. The dynamics of changes of bromine content in the blood after its artificial administration with food is almost the same in intact as well as decorticated rabbits. With increasing doses of bromine in intact as well as decorticated rabbits first of all the positive conditioned reflexes increase and internal inhibition is intensified, then the differentiations and increased motor activity are disinhibited and, finally, the animal falls asleep. It is assumed that bromine affects the functional state of the cerebral cortex cells indirectly through the subcortical formations. (Author)

Lapteva, N. N.
ACTION OF AMINAZINE ON THE PROTEIN FRACTIONS OF DOG BLOOD (Vliyanie Aminazina na Belkovye Fraktsii Krovi Sobak) tr. by Wanda M. Feeley. Sep 60, 10p. PSC no. 58-1514.
Order from OTS or SLA $1.10 62-24328

Trans. of Zhurnal Nevropatologii i Psikhiatrii (USSR) 1958, v. 58 [no. 2] p. 150-157.

DESCRIPTORS: Drugs, Psychotropic agents, *Chlorpromazine, *Blood proteins, Dogs, *Albumin, *Globulins, Psychoses.

Dogs were used to study the changes in the protein composition of the blood during aminazine (chlorpromazine) therapy. An experimental group of 10 dogs was given the drug, every day for 15 days. A control group of 8 dogs was given a physiological solution. The protein composition of the plasma was studied before the administration of the drug, on the 8th and 16th day, and 2 weeks after the last dose of the drug. On the 8th day, the albumin content in the plasma decreased. The content of α_1- and α_2- globulin increased in all test animals. This difference in albumin and α_1- and α_2- globulin before the administration of aminazine and on the 8th day was proven statistically. The average content of α_3-, β-, γ- globulin, fibrinogen and total quantity of protein in the plasma was practically unchanged on the 8th day. Two weeks after the drug was stopped, the plasma protein composition returned to normal limits. These investigations indicate that the prolonged administration of aminazine changed the protein composition of the blood plasma of dogs by decreasing the albumin content and increasing the α_1- and α_2- fractions of globulin.

Leclercq, S.
NEPHELOMETRIC DETERMINATION OF COLISTIN (Dosage Nephelometrique de la colistine). [1963] 7p.
Order from SLA $1.10 63-16513

Trans. of Inst[itut] Pasteur [Paris]. Ann[ales] (France) 1961, v. 100, Apr, suppl. p. 77-83.

DESCRIPTORS: *Biological assay, *Colimycin, Antibiotics, Drugs, Colorimetry, Optical analysis.

Levit, V. G.
SUPPORTIVE AND ARRESTING THERAPY OF SCHIZOPHRENIA WITH NEUROLEPTIC DRUGS (O Poddershivayushchem i Kupiruyushchem Lechenii Shizofrenii Neirolepticheskimi Sredstvami) tr. by W. M. Feeley. Mar 61, 14p. (refs. omitted). PSC no. 60-1113.
Order from OTS or SLA $1.60 62-24317

Trans. of Zhurnal Nevropatologii i Psikhiatrii (USSR) 1960, v. 60 [no. 5] p. 602-611.

DESCRIPTORS: Therapy, Drugs, *Psychoses, *Psychoanaleptic drugs, Psychiatry, Chlorpromazine, Reserpine.

The supportive therapy used in 125 psychotic cases following hospital discharge is outlined. The general effects and value of neuroleptic drugs is discussed in relation to various types of psychoses.

Martin, Rene, Chabbert, Y. A. and others.
RATE OF DEVELOPMENT OF URINARY BACTERIAL FLORA UNDER THE INFLUENCE OF ANTIBIOTICS (Vitesse d'Évolution de la Flore Bactérienne Urinaire sous l'Influence des Antibiotiques). [1963] 13p. 9 refs.
Order from SLA $1.60 63-16512

Trans. of la Presse Méd[icale] (France) 1961, v. 69, [no. 20] p. 842-844.

DESCRIPTORS: Bacteria, *Urinary system, Growth, *Antibiotics, Drugs, Biological assay.

The rate of development of urinary bacteria under the influence of antibiotics was studied in monomicrobial infections due to E. coli or Klebsiella by making urinary bacterial counts every four hours during and after the treatment. This technique made it possible to determine the urine sterilization time, i.e. the time necessary for lowering the number of urinary bacteria from its initial level (around 10^6 bacteria/ml.) to less than 10 bacteria per ml. With Colistin methanesulfonate, the mean sterilization time was of the order of ten hours (± six hours). This time is very short compared with that of other antibiotics whose effects will be reported in a later study. It is also possible to calculate by this means the time necessary for obtaining replacement of the initial flora by a resistant flora belonging either to a resistant species or to a mutant of the original strain. Three cases of selection of these mutants were observed with Colistin methanesulfonate in times varying from eight to fifty-four hours. It appears from this study that changes in urinary flora are extremely rapid. (Author)

Nishi, Mitsumasa; Matsuura, Kiyoshi and others.
A HISTOCYTOLOGICAL STUDY CONCERNING THE RELATIONSHIP BETWEEN HEMATOPORPHYRIN-Hg(MH), PORPHYRIN, MALIGNOLIPIN AND THE MALIGNANT TUMOR [AND] CONCERNING CLINICAL EXPERIENCE WITH HEMATOPORPHYRIN-Hg (MH) WITH FATAL CANCER PATIENTS. [1959] 9p.
Order from SLA $1.10 62-16049

Trans. of [Gann (Japan) 1958, v. 49, suppl. p. 27-30]. Separate translations of each article with foreign text are available from SLA mi$1.80, ph$1.80 as 59-17927 [1959] [5]p. and 59-17926 [1959] [5]p.

DESCRIPTORS: Histology, *Porphyrins, *Cancer, Tumors, Therapy, Morphology, Drugs, *Antineoplastic agents, Therapy.

For abstract of Matsuura et al. see Technical Translations 2: 763, 1959.

Ratchinskii, F. Y. and Vinokurova, N. M.
SYNTHÈSE DE QUELQUES DÉRIVÉS DE L'AMPHETAMINE (Synthesis of Derivatives from Amphetamine). 13p. 8 refs. FR-610.
Order from OTS, ETC or CNRS $0.80 62-26513

Trans. in French of unidentified Russian language article, n.d.

DESCRIPTORS: *Chemotherapeutic agents, *Amines, Benzenes, *Benzedrine sulfate.

Ratner, N. A., Glezer, G. A., and Spivak, G. L.
ISMELIN (GUANETHIDINE) IN HYPERTENSION. [1963] 15p. 11 refs. FASEB manuscript no. S 303-2.
Order from OTS or SLA $1.60 63-23020

Trans. of Terapevticheskii Arkhiv (USSR) 1962, v. 34, no. 8, p. 102-109.

DESCRIPTORS: *Guanethidine, *Hypertension, Drugs, Vasoactive agents.

Ismelin (guanethidine) possesses high hypotensive activity and brings about a reduction in arterial pressure. The hypotensive action of Ismelin is due mainly to suppression of the sympathetic influences on the heart and vessels, manifested by deceleration of the heart rate and reduction of the venous pressure, and reduction of peripheral resistance. The hypotensive action of Ismelin is equal to or better than that of ganglionic-blocking agents. It does not cause side-effects due to blocking of the parasympathetic ganglia. The hypotensive action of the preparation is often accompanied by the development of orthostatic hypotension. This may, in the acute form of orthostatic syncope make it difficult to use Ismelin and may necessitate reducing the dose. In addition to the reduction of arterial pressure, Ismelin greatly improves the condition of the fundus oculi. Reduction of the filtration function of the kidneys is not regarded as a contraindication to the use of Ismelin.

Ribó, José.
TREATMENT OF INFECTIONS IN OTORHINOLARYNGOLOGY WITH THE COLISTIN-PENICILLIN COMBINATION (Tratamiento de Infecciones en Otorrinolaringología con la Asociación Colistin-Penicilina). [1963] 11p. 6 refs.
Order from SLA $1.60 63-16526

Trans. of la Prensa Méd[ica] Argent[ina] 1961, v. 48, 14 Apr, p. 903-968.

DESCRIPTORS: Infections, *Otorhinolaryngology, *Colimycin, *Penicillins, Antibiotics, Drugs.

Schönenberg, H.
COLISTIN (Colistina). [1963] 2p.
Order from SLA $1.10 63-16518

Trans. of Riforma Med[ica] (Italy) 1961, v. 75, Sep, p. 1020.

DESCRITPORS: Antibiotics, *Colimycin, Infants, Communicable diseases, Therapy, Drugs.

Smulevich, A. B.
CERTAIN TOXICO-ALLERGIC REACTIONS IN CONNECTION WITH THE USE OF AMINAZINE (O Nekotorykh Toksiko-Allergicheskikh Reaktsiyakh Svyazannykh s Primeneniem Aminazina) tr. by W. M. Feeley. Jan 61, 12p. (refs. omitted). PSC no. 60-1111.
Order from OTS $1.60 62-24319

Trans. of Zhurnal Nevropatologii i Psikhiatrii (USSR) 1960, v. 60, p. 585-592.

DESCRIPTORS: *Allergy, Toxicity, Drugs, *Antigen-antibody reactions, *Chlorpromazine, Psychiatry.

This is a study of 8 cases of dermitatitis which developed during aminazine (chlorpromazine) therapy. Detailed case histories of 4 of these cases are presented.

Sukasova, M. I.
THE TREATMENT OF ATHEROSCLEROSIS WITH DELIPIN. [1963] [12]p. 17 refs. FASEB manuscript no. S 405-2.
Order from OTS or SLA $1.60 63-23034

Trans. of Terapevticheskii Arkhiv (USSR) 1962, v. 34, no. 10, p. 44-49.

DESCRIPTORS: Therapy, *Atherosclerosis, Drugs, Metabolism, Lipids, *Ascorbic acid, *Methionine, *Vitamin B complex, *Barbiturates.

The treatment of patients with atherosclerosis, with or without accompanying hypertension, with delipin led to an obvious lowering of the blood cholesterol concentration, an increase in the phospholipids, a decrease in the β-lipoproteins and an increase in the phospholipid/cholesterol ratio. Investigation of the indices of lipid metabolism 3 months after the end of treatment revealed some elevation of the blood cholesterol level, a lowering of the phospholipids, an increase in the β-lipoproteins and a decrease in the phospholipid/cholesterol ratio. These indices did not, however, regain their initial values. Parallel with these positive changes in the indices of lipid metabolism following delipin therapy, the patients' general condition was improved, they slept better, the retrosternal and precordial pain was relieved, the dizziness was lessened or abolished, and their working capacity improved. Delipin therapy is not attended by any side effects. (Author)

Tomita, M., Myeo, S. and others.
RECHERCHES SUR LA SYNTHÈSE DES ANTHELMINTHIQUES. 5 ème Rapport. (Synthetic Studies of Anthelmintics V). 7p.
Order from OTS, ETC or CNRS $0.80 62-26907

Trans. in French of Yakugaku Zasshi (Japan) 1949 [v. 69] p. 151-154.

DESCRIPTORS: *Drugs, *Resorcinol, *Worms, Cyclohexanes, Chlorine compounds, Synthesis (Chemistry).

Umezawa, S.
RECENTS PROGRÈS DANS LA CHIMIE DES ANTIBIOTIQUES (Recent Progress of the Chemistry of Antibiotics). 18p. 56 refs. FX-13.
Order from OTS, ETC or CNRS $0.80 62-26511

Trans. in French of Yuki Gosei Kagaku Kyokai Shi (Japan) 1960, v. 18 [no. 1] p. 31-40.

DESCRIPTORS: *Antibiotics, Amino acids, Peptides, *Penicillin, Glucosides, *Streptomycins.

Wettstein, A., Heusler, K. and others.
SUBSTANCES THAT ACT ON THE EXCRETION OF ELECTROLYTES (Substanzen mit Wirkung auf die Elektrolyt-Ausscheidung). [1963] 2p. 2 refs.
Order from SLA $1.10 63-16434

Trans. of Angewandte Chemie (West Germany) 1957, v. 69, p. 689.
Another trans. is available from SLA as 58-828.

DESCRIPTORS: *Excretion, *Electrolytes (Physiology), Sodium, Potassium, Lactones, Drugs.

Zakharov, S. V.
ON THE CONDITIONED REFLEX INSULIN HYPOGLYCEMIA (K Voprosu of Uslovnoreflektornoi Insulinovoi Gipoglikemii) tr. by Wanda M. Feeley. Dec 61, 6p. (refs. omitted). PSC no. 60-2582.
Order from OTS or SLA $1.10 63-19710

Trans. of #Zhurnal Vysshei Nervnoi Deyatel'nosti (USSR) 1960, v. 10, no. 2, p. 280-284.

DESCRIPTORS: *Conditioned reflex, *Insulin, *Hypoglycemia, Shock therapy, Adaptation (Physiology).

Radiobiology

Bibikova, A. F., Busygin, V. E. and others.
REACTIONS OF AN ORGANISM OCCURRING DURING MASSIVE γ -IRRADIATION. 5 Dec 62 [15]p. 11 refs. FTD-TT-62-1689.
Order from OTS or SLA $1.60 63-19206

Unedited rough draft trans. of Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya (USSR) [1962] v. 6, no. 4, p. 57-62.

DESCRIPTORS: Adaptation (Physiology), *Radiation effects, Radiation sickness, *Gamma rays, *Brain, *Spinal cord, Bioelectronics, Cerebral cortex, *Hemopoietic system,

Investigations during the general massive effect of γ -rays on the animal organism made it possible to reveal very early changes in the central nervous system which are characterized by shifts in the bioelectrical activity of the cerebral cortex, disorders of hemodynamics and cerebrospinal fluid dynamics, and also by lesions of the nerve and glial structures of the brain tissue. The original changes of the brain hemodynamics are not accompanied by noticeable disorders of general hemodynamics. This regionalization of the changes evidently indicates a high radiosensitivity of all structures of the brain, including the vessels. Disorders in the activity of other vitally important systems follow the changes in the CNS. An analysis of the material permits the assertion that the cause of death of the animals in the fulminant form of radiation damage are the severe disorders in the central nervous system. (Author)

Levedeva, G. A.
DATA ON THE STUDY OF GASTRO-INTESTINAL TUMORS INDUCED BY RADIOACTIVE CERIUM (CE^{144}). 17 July 63, 7p. 21 refs. JPRS: 20210.
Order from OTS $0.50 63-31307

Trans. of Arkhiv Patologii (USSR) 1963, v. 25, no. 5, p. 40-44.

DESCRIPTORS: *Neoplasms, *Gastrointestinal system, *Cerium, Radiation effects, Radioactive isotopes, Rats.

Tumors of the gastro-intestinal tract, arising in rats after the administration of 9-18 microcuries per gram of Ce^{144} to the stomach, were studied. Neoplasms were detected in a period of 250 to 485 days from the beginning of the experiment and in histological structure represented adenomas, papillomas, leiomyomas, sarcomas, as well as squamous cell, adenic, mucous, diffuse, and solid carcinoma. The most frequent site of localization of tumors was the large intestine, a circumstance resulting from the more intensive irradiation of this part of the digestive tract. (Author)

Spiridonova, M. V.
THE DYNAMICS OF CHANGES IN THE ELECTRO-CARDIOGRAM OF THYROTOXICOSIS PATIENTS DURING RADIOIODINE THERAPY. [1963] [14]p. 9 refs. FASEB manuscript no. S 306-2.
Order from OTS or SLA $1.60 63-23022

Trans. of Meditsinskaya Radiologiya (USSR) 1962, v. 7, no. 8, p. 22-29.

DESCRIPTORS: Electrocardiography, *Hyperthyroidism, *Radiotherapy, Radioisotopes, Iodine.

Clinical and electrocardiographic observations of patients with moderate and severe thyrotoxicosis treated with I^{131} have shown the effect of radioiodine in early and late stages on the functions of automatism, excitability and conductivity of the myocardium and on the coronary vessels. The data obtained permit the inference that I^{131} is effective in the treatment of patients with moderate and severe thyrotoxicosis. (Author)

Surgery

Bagreeva, M.
THE FUTURE OF MEDICINE-METALLIC NERVES. 6 Feb 63 [5]p. FTD-TT-62-1686; AD-299 642.
Order from OTS or SLA $1.10 63-19570

Unedited rough draft trans. from Vechernaya Moskva (USSR) 1961, 22 Dec, p. 2.

DESCRIPTORS: Medicine, *Prosthetics, *Nerves, Metals, *Neuromuscular transmission.

A popularized account of researches involving the replacement of nerve fibers with metallic prosthetics.

Davezac, J. F. and Busson, A.
PENICILLIN-COLIMYCIN COMBINATION IN SURGERY OF THE DIGESTIVE TRACT (L'Association Penicilline-Colimycine en Chirurgie Digestive). [1963] 2p.
Order from SLA $1.10 63-16544

Partial trans. (excerpts) of [la] Presse Méd[icale] (France) 1961, v. 69 [no. 24] p. 1085-1086.

DESCRIPTORS: *Penicillins, *Colimycin, Surgery, *Gastrointestinal system, Infections.

This study describes the use of penicillin-colimycin combination, 1 million units of each, in postoperative therapy as well as in preoperative treatment of acute and febrile disorders of the digestive tract (acute and subacute infections of the biliary tract and one case of diverticular sigmoiditis with a fistula). Two cases are presented in which colimycin was used in preoperative treatment. (Author)

Motta, G., Profazio, A., and Acciarri, T.
ROENTGENCINEMATOGRAPHIC OBSERVATIONS FOR THE PHONATION OF LARYNGECTOMIZED SUBJECTS. [1962] 12p. (figs. omitted) 105 refs.
Order from SLA $1.60 63-10720

Trans. of Oto-Rino-Laringologia Italiana, 1959 [v. 27] p. 261-286.

DESCRIPTORS: *X-ray photography, X-rays, *Motion pictures, *Larynx, Excision, *Speech, Surgery.

Zoology

ENTOMOLOGICAL REVUE, 1958-61, VOLS. 37-40. 1959-[1962] 16 nos.
Order from OTS or SLA

Trans. of Entomologicheskoe Obozrenie (USSR) 1958-61, v. 37-40.

DESCRIPTORS: *Insects.

v. 37, no. 1, 192p. $13.50, 63-23429-(37/1)
v. 37, no. 2, 256p. $16.50, 63-23429-(37/2)
v. 37, no. 3, 247p. $16.00, 63-23429-(37/3)
v. 37, no. 4, 179p. $12.50, 63-23429-Index(37/4) (includes index)
v. 38, no. 1, 258p. $16.50, 63-23429-(38/1)
v. 38, no. 2, 186p. $13.00, 63-23429-(38/2)
v. 38, no. 3, 218p. $14.50, 63-23429-(38/3)
v. 38, no. 4, 223p. $15.00, 63-23429-Index(38/4) (includes index)
v. 39, no. 1, 179p. $12.50, 63-23429-(39/1)
v. 39, no. 2, 179p. $12.50, 63-23429-(39/2)
v. 39, no. 3, 190p. $13.00, 63-23429-(39/3)
v. 39, no. 4, 200p. $13.50, 63-23429-Index(39/4) (includes index)
v. 40, no. 1, 142p. $11.00, 63-23429-(40/1)
v. 40, no. 2, 128p. $10.10, 63-23429-(40/2)
v. 40, no. 3, 146p. $11.00, 63-23429-(40/3)
v. 40, no. 4, 156p. $11.50, 63-23429-Index(40/4) (includes index)

Cherfas, B. I.
TASKS OF ICHTHYOLOGY IN CONNECTION WITH PROBLEMS OF FISH CULTURE (Zadachi Ikhtiologii v Svyazi s Problemami Rybovodstva). 27 Feb 63, 14p. Trans. A-1387.
Order from OTS or SLA $1.60 63-15935

Trans. of Voprosy Ikhtiologii (USSR) 1955, no. 3, p. 3-8.

DESCRIPTORS: *Fishes, Reproduction (Physiology), Identification, Growth, Ecology, Morphology, Lakes, Distribution.

The basic problems of Soviet fish culture are enumerated and possible solutions are given. Consideration is given to: reproduction of valuable commercial stocks, fish acclimatization, rationalization of lake economy, organization of river fish economy and the fish industry, repopulation of reservoirs with desirable species, and the raising of new and improved stocks of fish.

Disler, N. N.
DEVELOPMENT OF AUTUMN CHUM SALMON IN THE AMUR RIVER (Razvitie Osennei Kety Reki Amura). 1963, 14p. 5 refs. PL-480 Int.
Order from OTS $0.50 63-11100

Trans. of Soveshchanie po Voprosam Lososevogo Khozyaistva Dal'nego Vostoka. Trudy (USSR) 1953, v. 9, p. 129-143.

DESCRIPTORS: *Fishes, Marine biology, *Salmonidae, Embryos, Growth.

The development of the embryos and fry of Oncorhynchus keta was investigated both in the natural habitat and in the hatchery.

Dubinin, V. B. and Dubinin, M. N.
PARASITOFAUNA OF MAMMALS OF THE DAURIAN STEPPES: SELECTED PART [Parazitofauna Mlekopitayushchikh Daurskoi Stepi] tr. by R. Ericson. May 60, 2p.
Order from OTS or SLA $1.10 62-15631

Partial trans. (p. 152-154) of [Materialy k Poznaniyu Fauny i Flory SSSR. Novaya Seriya. Otdel Zoologicheskii] 1951, v. 22(37) Mater[ialy] po Gryzun[am] no. 4, p. 98-156.

DESCRIPTORS: *Parasites, *Mammals, Insects, *Diptera, Taxonomy, Disease vectors, Horses, Cattle.

Contents:
Larvivoridae (= Tachinidae)
Gastrophilinae
Hypodermatinae
Calliphorinae
Sarcophaginae.
(See also 61-27450)

Dubinin, V. B. and Dubinin, M. N.
PARASIT[O]FAUNA OF MAMMALS [OF] THE DAURIAN STEPPES: SELECTED PART [Parazitofauna Mlekopitayushchikh Daurskoi Stepi] tr. by P. A. Kazakov. [1961] 23p. (figs. omitted). [CSIRO Trans.] 5415.
Order from OTS or SLA $2.60 61-27450

Partial trans. (p. 129-144) of [Materialy k Poznaniyu Fauny i Flory SSSR. Novaya Seriya. Otdel Zoologicheskii] 1951, v. 22[37] [Materialy po Gryzunam] no. 4, p. 98-156.

DESCRIPTORS: *Parasites, *Mammals, *Lice, *Siphonaptera, Rodents, Insects, Disease vectors, Taxonomy.

Contents:
Lice: Anoplura
Hair-eaters: Mallophaga. Trichodectoidea. Family Trichodectidae
Fleas: Aphaniptera.

Lebedeva, L. S.
THE MYSTERY OF THE MALLEE FOWL (Taina Sornykh Kur) tr. by A. Neal. [1963] [11]p. (foreign text included). CSIRO Trans. no. 5936.
Order from OTS or SLA $1.60 63-19149

Trans. of Priroda (USSR) 1962 [v. 51] no. 12, p. 105-108.

DESCRIPTORS: *Birds, Eggs, Reproduction (Physiology).

Tambovtsev, B. M.
THE PRESENT STATE OF THE FISHERY OF THE WHITE SEA HERRING, AND ITS BIOLOGY. 1962 [38]p. (figs. omitted) 18 refs. [DSIR] NLL M. 3913.
Order from OTS or SLA $3.60 63-15217

Trans. of [Materialy po Kompleksnomu Izucheniyu Belogo Morya (USSR) 1957, v. 1, p. 44-73.

DESCRIPTORS: *Fishes, *Herring, White Sea, Marine biology, Biology, Age, Growth, Reproduction, Ecology, Distribution, Fisheries.

Topics include: Localities and seasons for catching; the present state of the herring fishing industry; the race composition of the White Sea herring, its size and age; the attainment of sexual maturity, the fecundity, the sex composition and reproduction; distribution during the fattening and spawning periods; seasonal distribution of the megalo-vertebral herring; the position regarding stocks in view of fluctuations in the numbers of each generation; factors influencing the quantitative and qualitative composition of stocks of the small oligo-vertebral herring in different parts of the White Sea; and prospects for the development of the herring fisheries in the White Sea and possible methods for restoring the stocks of herring.

Vedenskii, A. P.
CALCULATIONS OF THE RATE OF GROWTH OF FISH BY MEANS OF MULTIPLICATION TABLES. 1962 [8]p. [DSIR] NLL M.10 002.
Order from OTS or SLA $1.10 63-15225

Trans. of [Tikhookeanskii Nauchno-Issledovatel'skii Institut Rybnogo Khozyaistva i Okeanografii]. Izvestiya (USSR) [1955] v. 43, p. 185-187.

DESCRIPTORS: Mathematical analysis, Growth, *Fishes, Marine biology.

A method used at the Pacific Institute of Fisheries and Oceanography (TINRO) for calculating the rate of growth of fishes is described. The calculations are based on the formula $l_n = \frac{l_n}{t}$ in which l is the length of the fish, n is the age in years and t is the length of the scale. The marks for the annual rings of the fish are plotted on a card prepared from 1 mm squared paper. An ordinary microscope and a camera lucida are used for this. By using a standard multiplication table, the growth rate is readily calculated. It is claimed that the margin of error in these calculation is much less than in the method in general use which employs a slide rule for the calculations. It is also simpler and faster than the methods formerly used at TINRO.

CHEMISTRY

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 248 (CHEMISTRY SERIES). 22 July 63, 9p. JPRS: 20290.
Order from OTS $0.50 63-31350

Abstract trans. of Silikat Technik (East Germany) 1963, v. 14, no. 1/2, p. 1-49, 54-57.

DESCRIPTORS: *Abstracts, Bibliographies, Chemistry, *Glass, *Ceramic materials, Silicates, Chemical analysis, Physical chemistry, Cements, Industrial plants, Minerals, Construction materials industry.

TRAITEMENT D'ANTIAGGLOMERATION DU SULFATE D'AMMONIUM (Prevention of Agglomeration of Ammonium Sulfate). 7p. FX-835.
Order from OTS, ETC or CNRS $0.80 62-26439

Trans. in French of [published] Japanese patent 3060-1959, by Société Anonyme d'Industrie Chimique de Sumitomo, Osaka, pub. 27 Apr 59.

DESCRIPTORS: *Sulfates, *Ammonium radicals, Crystals, Tin compounds, *Coatings.

Barkalov, I. M. and Gol'danskii, V. I.
ADVANCES IN RADIATION POLYMERIZATION. July 63, 6p. 57 refs.
Order from ICE in v. 3, no. 3, $15.00/year

Trans. of Khim[icheskaya] Prom[yshlennost'] (USSR) 1962, no. 12 [p. 859-863].
Another trans. is available from OTS $0.50 as 63-21657, JPRS-18868, 24 Apr 63, 19p.

DESCRIPTORS: *Polymerization, Free radicals, *Vinly plastics, *Radiation effects, Ionization, Radiation chemistry, Chemical engineering, *Reviews.

Higashi, Koshiro, and Tsukamoto.
SEPARATION DE LA PARTIE SOLIDE DES ACIDES GRAS, DES GRAISSES OU DES CIRES (Separation of Solids from Fatty Acids, Fats or Waxes). 5p. FX-632.
Order from OTS, ETC or CNRS $0.80 62-26479

Trans. in French of [published] Japanese patent 2685-1960 by Compagnie de Poissonneries de Tayo, Chiyotaku, pub. 24 Mar 60.

DESCRIPTORS: *Fats, *Fatty acids, *Waxes, Solids, Liquids, Detergents, Oil filters.

Ivanova, L. I.
SUR LA FORMATION DES ALUMINO-SILICATES DANS LES MASSES DE FUSION DU SYSTÈME Na_3AlF_6 - Al_2O_3-SiO_2(Formation of Aluminosilicates in the Melts of the Na_3AlF_6-Al_2O_3-SiO_2 System). 11p. 16 refs. FR-1747.
Order from OTS, ETC or CNRS $0.80 62-26521

Trans. in French of Izvestiya Vysshikh Uchebnykh Zavedenii. Khimiya i Khimicheskaya Tekhnologiya 1960 v. 3 [no. 5] p. 970-974.

DESCRIPTORS: *Aluminum compounds, *Silicates, Cryolite, Oxides, Melting, Sodium compounds.

Mankina, N. N.
CONDITIONS OF FORMATION OF DEPOSITS IN THE PRESENCE OF A NUMBER OF SCALE FORMERS AND METHODS OF THEIR PREVENTION (Usloviya Obrazovaniya Otlozhenii v Prisutstvii Ryada Nakipeobrazovatelei i Sposoby Ikh Predotvrashcheniya). [1962] 17p. (foreign text included) 6 refs.
Order from OTS or SLA $1.60 63-15699

Trans. of Elektricheskie Stantsii (USSR) 1962 [v. 33] no. 2, p. 13-16.

DESCRIPTORS: *Iron compounds, *Oxides, *Copper compounds, *Scale, Deposits, *Antioxidants, Hydrazines, Phosphates, *Feed water, *Boilers.

Hexametaphosphate decreases the rate of iron oxide scale formation by 65% to 75% and completely prevents hardness and copper scale. Hydrazine prevents iron oxide and copper deposits but does not affect hardness deposition. Hexametaphosphate and hydrazine together practically completely prevent deposition of iron oxide, metallic copper, and hardness on the heating surfaces. (Author)

Minachev, Kh. M., Shuikin, N. I., and Rothdestvenskaya, I. D.
POISONING OF PLATINUM CATALYSTS CONTAINING SMALL AMOUNTS OF ACTIVE METAL ON THE CARRIER UNDER CONDITIONS OF DEHYDROGENATION CATALYSIS [Otravlenie Platinovykh Katalizatorov s Malym Soderzhanyem Aktivnogo Metalla na Nositele v Uslovyakh Degidrogenizatsyonnogo Kataliza] [1962] 13p. 11 refs.
Order from OTS or SLA $1.60 63-10395

Trans. of #Akad[emiya] Nauk SSSR. Otdel[enie] Khim[icheskikh] Nauk. Izvest[iya] 1952, no. 4, p. 603-615.
Another trans. is available from ATS as RJ-116.

DESCRIPTORS: Inhibition, *Platinum catalysts, Metals, *Dehydrogenation, Catalysis, *Sulfur compounds, Cyclohexanes, Sulfides.
Sulfur compounds were found to have little poisoning effect on dehydrogenation catalysts containing finely dispersed platinum on a carrier. The nature of catalyst poisoning was practically independent of the molecular structure of the sulfur compound. It was apparent that sulfur compounds decomposed on the catalyst forming H_2S at about the same rate. The amount of organic sulfur required for poisoning the catalysts was proportional to the amount of platinum contained in the catalysts. The amount of sulfur necessary to reduce the catalytic activity by 70 to 80% was 6 to 7% by weight of platinum deposited on the support. Catalysts on various supports, poisoned by the same poison, regenerated differently. The energy of activation of the cyclohexane dehydrogenation reaction over fresh as well as poisoned catalysts remained constant. The magnitude of the base of the exponential term in the Arrhenius equation was reduced more than ten times with poisoned catalysts, as compared to the freshly prepared catalysts. These data as well as structural studies indicate that poisoning of platinum catalysts occurs through the blocking of the active centers.

Shorsher, I. N., and Rybakov, V. V.
PROCÉDÉ DE PRÉPARATION DE LA CRYOLITHE PAR LA MÉTHODE ALCALINE (Alkalyne Method for Cryolite). 4p. FR-2319.
Order from OTS, ETC or CNRS $0.80 62-26443

Trans. in French of Russian patent application 623576/22 [21 Mar 59] (Byulleten'Izobretenii, 1959, no. 24. [p. 15].

DESCRIPTORS: *Cryolite, Production, Sodium compounds, Fluorides, Carbonates, Silicates.

Sobolev, B. N.
MECHANISM OF THE EFFECT OF HYDRAZINE ON THE PROCESS OF IRON OXIDE SCALE FORMATION (Mekhanizm Vliyaniya Gidrazina na Protsess Zheleznookisnogo Nakipeobrazovaniya). [1962] 13p. (foreign text included) 9 refs.
Order from OTS or SLA $1.60 63-15700

Trans. of Teploenergetika (USSR) 1962 [v. 9, no. 3] p. 48-50.

DESCRIPTORS: *Hydrazines, *Iron compounds, *Oxides, *Feed water, *Scale, Boilers, *Reaction kinetics.
The decomposition of hydrazine at 300°C takes 10, 20, 40 minutes at p^H values of 8, 9, 10. The reaction of hydrazine with oxygen at 200° to 300°C and p^H 9 to 10 in the presence of catalysts including copper is completed practically instantly. Under the conditions prevailing in steam boilers, hydrazine reduces iron oxides to lower valency oxides and partly to the metal; this explains its action as a retarder of iron oxide scale formation. (Author)

Spring, W.
CONTRIBUTION TO THE KNOWLEDGE OF MASS ACTION. [1963] 3p.
Order from SLA $1.10 63-16173

Trans. of German language article from unidentified source, n.d., p. 344-346.

DESCRIPTORS: Chemical reactions, *Chemical equilibrium.

Stirikovich, M. A., Martinova, O. I. and others.
'NVESTIGATION OF THE BEHAVIOR OF MAGNESIUM COMPOUNDS IN A SUPERCRITICAL-PRESSURE BOILER (Issledovanie Povedeniya Soedinenii Magniya v Trakte Kotla Sverkhkriticheskogo Davleniya). [1962] 13p. (foreign text included) 7 refs.
Order from OTS or SLA $1.60 63-15701

Trans. Teploenergetika (USSR) 1962 [v. 9] no. 9, p. 46-49.

DESCRIPTORS: *Magnesium compounds, Pressure, Steam, *Boilers, Feed water, Tests.

Tsujiya, S.
METHODE DE RÉCUPÉRATION DE LA MÉLAMINE APRÈS RÉCRISTALLISATION À PARTIR DE LA SOLUTION USAGÉE (Recovery of Melamine after Recrystallization of Used Solutions). 4p. FX-630.
Order from OTS, ETC or CNRS $0.80 62-26478

Trans. in French of [published] Japanese patent 6285-1959 by Compagnie d'Electricité Industrielle, Ogakishi, pub. 18 July 59.

DESCRIPTORS: *Melamine, Chemical waste, Hydrogen ion concentration, Crystallization, Sulfuric acid.

Zakharkin, L. I., Gavrilenko, V. V., and Okhloby'stin, O. Yu.
ACTION OF TRIETHYL ALUMINUM AND DI-ISOBUTYL ALUMINUM HYDRIDE ON METAL CHLORIDES OF THE SIXTH GROUP IN THE PRESENCE OF CARBONIC ACID. SYNTHESIS OF CHROMIUM, MOLYBDENUM, AND TUNGSTEN CARBONYLS. [1963] 5p. 5 refs.
Order from OTS or SLA $1.10 63-14152

Trans. of #Akademiya Nauk SSSR [Otdelenie Khimicheskikh Nauk]. Izvestiya, 1958 [no. 1] p. 100-102.
Another trans. is available from ATS as ATS-46K23R, 3p.

DESCRIPTORS: *Molybdenum compounds, *Chromium compounds, *Tungsten compounds, *Carbonyl radicals, Synthesis (Chemistry), *Catalysts, *Metal-organic compounds, *Aluminum compounds, Ethyl radicals, Butyl radicals, Hydrides, Preparation, *Carbonic acids.

Analytical Chemistry

CONTINUOUS EXTRACTION PROCESS OF NICOTINE FROM TOBACCO. [1963] [6]p. 1 refs.
Order from OTS or SLA $1.10 63-16581

Trans. of French patent 674,507, 3 May 29, by Bigot, Schärfe & Co., Chem. Fabrik., Germany, delivered 21 Oct 29, pub. 19 Jan 30.
Another trans. is available from K-H $6.25 as K-H-11917a [1962] 945 words.

DESCRIPTORS: *Tobacco, *Nicotine, Separation.

The invention involves process of continuous extraction of nicotine from tobacco, process characterized in that one mixes the tobacco to be treated with an excess of a hydrated oxide of an alkaline metal of alkaline-earth metal and with water, and that one subjects it, while agitating it continually in a closed container, to the action of superheated vapors circulating countercurrently and that one frees it of nicotine while crying it. (Author)

Adamovich, L. P. and Napadailo, I. N.
DÉTERMINATION DE LA CONSTANTE D'INSTABILITÉ DU COMPLEXE DU BÉRYLLIUM AVEC L'ACIDE ÉTHYLÈNE-DIAMINE-TÉTRA-ACETIQUE (Opredelenie Konstanty Nestoikosti Kompleksa Berilliya s Etilendiamintetrauksusnoi Kislotoi) [Determination of the Instability Constant of a Beryllium Complex with Ethylenediaminetetraacetic Acid] tr. by A. Giuliani. 26 Mar 62 [15]p. (foreign text included) 19 refs. CEA Trans. no. R 1504.
Order from OTS or SLA $1.60 63-15495

Trans. in French of #Zh[urnal] Anal[iticheskoi] Khim[ii] (USSR) 1961, v. 16, no. 2, p. 158-161.

DESCRIPTORS: *Complex compounds, *Beryllium compounds, Stability, Determination, *Sequestering agents, *Ethylenedinitrilo tetracetates, Chemical equilibrium, Spectroscopy.

The unstability constant of the beryllium complex with EDTA determined by means of ion exchange on the KY-I cationite was found to be equal $(1.5 \pm 0.2) \times 10^{-9}$ (for BeHY-). This constant value being used in calculations, the data conforming to the experimental data were obtained. (Author)

[Aleksandrov, G. P. and Levchenko, T. F.]
DETERMINATION OF IODINE AND BROMINE IN OIL-WELL WATER BY THE METHOD OF DIFFERENTIAL TITRATION [Opredelenie Ioda i Broma v Vurovykh Metodom Diferentsirovannogo Titrovaniya]. [1963] 17p. 16 refs.
Order from OTS or SLA $1.60 63-14097

Trans. of Ukrainskii Khimicheskii Zhurnal (USSR) 1950 [v. 16, no. 6] p. 599-611.

DESCRIPTORS: *Iodine, *Bromine, Volumetric analysis, Petroleum, Water, Mixtures, Solutions.

There was verified an iodimetric method for the determination of the bromine in standard solutions as well as in petroleum waters, in doing which it has been found, among other things, that the presence of sodium chloride has no influence on the precision of the determination of this element. There was studied the influence of the acidity of the medium on the reaction of the interaction between IO_3^- and I^- and between BrO_3^- and I^-. It was experimentally established that the acidity of the solution at which the IO_3^- and I^- react while the BrO_3^- and I^- remain unchanged corresponds to a concentration of the hydrogen ions at which the solution of methylorange still retains its red color (pH 3.1). There were found conditions for the separate determination of the iodine and bromine from one specimen by the method of differential titration, and the formulated method has been verified on standard solutions and on petroleum water. The method assures the necessary precision of the determination of these elements, and enables the quantitative determination of the iodine in the presence of 400 times the quantity of bromine. (Author)

Blasius, E. and Lange, G.
ION EXCHANGE MEMBRANES IN PREPARATIVE AND ANALYTICAL CHEMISTRY. [1963] 27p. (refs. figs. omitted).
Order from SLA $2.60 63-16136

Trans. of Zeitschrift für Analytische Chemie (West Germany) 1958, v. 160, p. 169-188.

DESCRIPTORS: *Ion exchange resins, Membranes, *Electrodialysis, *Molybdates, *Tungstates, *Magnesium, *Aluminum, Sodium compounds, Carbonates, Purification, Synthesis (Chemistry), Chemical analysis.

Busev, A. I. and Koretz, N. P.
DOSAGE CALORIMÉTRIQUE DU BISMUTH DANS LE PLOMB À L'AIDE DE LA THIOURÉE (Colorimetric Determination of Bismuth in Lead with Thiourea). 5p.
Order from OTS, ETC or CNRS $0.80 62-26498

Trans. in French of Zavodskaya Lab[oratoriya] (USSR) 1949, v. 15 [no. 1] p. 30-34.

DESCRIPTORS: *Lead, *Bismuth, Colorimetric analysis, *Thiourea, Complex compounds.

Carugno, N. and Giovannozzi-Sermanni, G.
DETERMINATION OF 3-4 BENZOPYRENE AND OTHER POLYCYCLIC AROMATIC HYDROCARBONS BY MEANS OF GAS CHROMATOGRAPHY.
Aug 60, 9p.
Order from K-H $11.25 K-H-10281 b

Trans. of il Tabacco (Italy) 1959 [v. 63, no. 692] p. 285-292.

DESCRIPTORS: *Gas chromatography, Chromatographic analysis, *Hydrocarbon, *Benzopyrenes, Chemical analysis.

Flaschka, H.
QUANTITATIVE PRECIPITATIONS OF SULFIDE WITH THIOACETAMIDE IN MICROANALYSIS (Über Quantitative Sulfidfällungen mittels Thioacetamid in der Mikroanalyse). [1963] 8p. 8 refs.
Order from SLA $1.10 63-16907

Trans. of Z[eitschrift für] Anal[ytische] Chem[ie] (West Germany) 1951, v. 133, p. 103-109.

DESCRIPTORS: *Sulfides, *Thio radicals, *Acetamides, Microanalysis, Chemical precipitation, Quantitative analysis, Hydrogen compounds.

Gerdanian, P. and Dode, M.
DETERMINATION OF THE PRESSURES OF OXYGEN IN EQUILIBRIUM WITH THE OXIDES OF URANIUM UO_2+X. [1963] 3p.
Order from ATS $4.00 ATS-66Q69F

Trans. of [Academie des Sciences, Paris]. Compt-[es] Rend[us] (France) 1962, v. 255, p. 665-667 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Uranium compounds, Oxides, Chemical equilibrium, Oxygen, Pressure, Chemical analysis.

Giovannozzi, Mario.
CONCERNING THE REFERENCE OF THE VALUES OF THE CHEMICAL ANALYSIS OF TOBACCOS. [1962] 9p. refs.
Order from SLA $1.10 63-16881

Trans. of il Tabacco (Italy) 1956, v. 60 [no. 681] p. 347-351.
Another trans. is available from K-H $12.50 as K-H 11999-a [1962] 10p.

DESCRIPTORS: Chemical analysis, *Tobacco.

Gornyi, G., Ya.
SUR UNE RÉACTION NOUVELLE PERMETTANT LA MISE EN ÉVIDENCE DES ALCALOIDES (System of Consecutive Detection of Alkaloids). 4p. 3 refs.
Order from OTS, ETC or CNRS $0.80 62-26486

Trans. in French of Ukrainskii Khimicheskii Zhurnal (USSR) 1955, v. 21, no. 6, p. 646-654.

DESCRIPTORS: *Alkaloids, Chemical reactions, Iodides, Potassium compounds, Chlorides, Platinum compounds.

Granger, Camille and Zwilling, Jean-Paul.
THE SEPARATION AND DETERMINATION OF SOME CONSTITUENTS OF HEXACHLOROCYCLOHEXANE BY CHROMATOGRAPHIC ADSORPTION ON SILICA. [1963] 10p. 7 refs.
Order from SLA $1.10 63-16030

Trans. of Soc[iété] Chim[ique] de France. Bull[etin] 1950, p. 873-876.

DESCRIPTORS: *Cyclohexanes, Chromatographic analysis, Adsorption, Separation, Silicon compounds, Dioxides, Chlorides, *Molecular isomerism.

The analysis of the hexachlorocyclohexanes can be effected by fractional adsorption on silica containing from 15 to 20% water. The elution of the isomers other than delta-hexachlorocyclohexane is effected by 30-50 petroleum ether. The separation of the delta isomer can be effected by carbon tetrachloride. The adsorption of the different constituents on the silica varies with the quantity of water which it contains; by making the amount of moisture vary one can obtain more distinct separations (or operations which are more sparing of the reagents) of the various products contained in hexachlorocyclohexane. (Author)

Grimmer, G.
A METHOD FOR THE DETERMINATION OF 3,4-BENZOPYRENE IN TOBACCO-SMOKE CONDENSATES. [1962] 19p. 38 refs.
Order from SLA $1.60 63-16658

Trans. of Beiträge zur Tabakforschung [sic] 1961, no. 3, p. 107-116.
Another trans. is available from K-H $23.75 as K-H 11411-2 [1962] 19p.

DESCRIPTORS: *Benzopyrenes, *Tobacco, *Smokes, Cigarettes.

A method is described for the determination of condensed aromatic hydrocarbons in the smoke condensate. It is intended for the analysis of 3,4-benzopyrene, but also permits one to determine other individual components of the same group of substances with the same separation procedure. The method makes possible the determination of a highly purified benzopyrene in about 1 1/2-2 work days. This short time was attained by a small substance requirement of 1-2 g. of condensate. The very small initial amount presupposes a very sharp cutting of all benzopyrene-containing fractions. (Author)

Hjern, L.
APPLICATION OF THE SILVER DIETHYLDITHIOCARBAMATE METHOD FOR THE DETERMINATION OF ARSENIC IN TOBACCO. [1962] 14p. 31 refs.
Order from SLA $1.60 63-16910

Trans. of Beiträge zur Tabakforschung [sic] 1961, no. 3, p. 75-81.
Another trans. is available from K-H $17.50 as K-H 11401d [1962] 14p.

DESCRIPTORS: Determination, *Arsenic, *Tobacco, Chemical analysis, *Carbamates, Silver compounds, Cigarettes.

The silver diethyldithiocarbamate method was found to be particularly suitable for the determination of small amounts of arsenic present in tobacco. It is just as sensitive as the Gutzeit method and produces results of approximately the same accuracy, while it is simpler and less critical in its procedure; therefore it is recommended particularly for occasional analyses. (Author)

Hönig, Moritz.
ON NITROCHLOROTOLUENES AND CHLOROTOLUIDINES, REPT. 3. [1962] 7p. 4 refs.
Order from SLA $1.10 62-16289

Trans. of articles from an unidentified source [888?].

DESCRIPTORS: *Toluenes, *Chlorides, *Nitro radicals, *Toluidines, Reduction, Nitration.

Ivanov, Nikolai.
A RAPID METHOD OF DETERMINING NICOTINE IN FRESH TOBACCO LEAVES (PRELIMINARY COMMUNICATION) [1963] 7p. 5 refs.
Order from SLA $1.10 63-16493

Trans. of Bulgarski Tyutyun, 1962, v. 7, no. 7/8, p. 30-33.

DESCRIPTORS: Chemical analysis, *Tobacco, *Nicotine.

Kraft's method for an accurate and objective determination of nicotine was modified. The visual estimation with the aid of a standard stain has been replaced by calculation based on the relationship between the diameters of a ring, formed by nicotine with the reagent and the amount of nicotine in a sample. (Author)

Ivanov, N. and Paskaleva, K.
SOME METHODS FOR DETERMINING ENZYMES IN TOBACCO. [1962] 9p.
Order from SLA $1.10 63-16648

Trans. of Bulgarski Tyutyun, 1960, v. 5, p. 150-154. Another trans. is available from K-H $25.00 as K-H 11411-c [1962] 20p.

DESCRIPTORS: *Tobacco, *Enzymes, Chemical analysis.

Izdebska, Kazimiera and Romanowski, Henryk.
NICOTINE DETECTION IN TOXICOLOGICAL ANALYSIS BY MEANS OF 1-CHLORO-2,4-DINITROBENZENE AND PAPER CHROMATOGRAPHY. [1962] 7p. 22 refs.
Order from SLA $1.10 63-16649

Trans. of Acta Poloniae Pharmaceutica, 1961, v. 18, no. 4, p. 339-342.
Another trans. is available from K-H $8.75 as K-H 11627-a [1962] 7p.

DESCRIPTORS: *Nicotine, *Nitrobenzenes, Toxicity, *Chromatographic analysis, Detection.

The pharmacopoeian reagent 1-chloro-2,4-dinitrobenzene was applied to the specific detection of nicotine in pure state, as well as for the detection of other alkaloids (atropine, colchicine, cocaine, aconitine, veratrine, brucine, emetine, ephedrine, narcotine, pilocarpine, strychnine, papaverine) by paper chromatography. (Author)

Kapitel, W.
SEPARATION OF FATTY ACIDS FOR ANALYTICAL PURPOSES IN A CHROMATOGRAPHIC COLUMN. [1963] 13p. 3 refs.
Order from SLA $1.60 63-16295

Trans. of [Fette Seinfen Anstrichmittel] (West Germany) 1956, v. 58, no. 2, p. 91-94.

DESCRIPTORS: *Fatty acids, Separation, *Chromatographic analysis, Hydrogenation.

Klygin, A. E. and Nikol'skaya, N. A.
MÉTHODE DE DOSAGE COMPLEXOMÉTRIQUE DE L'URANIUM TETRAVALENT AVEC UTILISATION DE L'ARSENAZO I COMME INDICATEUR [Chelatometric Method for Determining Tetravalent Uranium with Arsenazo I] tr. by Garber. 28 Mar 62 [13]p. 8 refs. CEA Trans. no. R 1512.
Order from OTS or SLA $1.60 63-15488

Trans. in French of #Zh[urnal] Anal[iticheskoi] Khim[ii] (USSR) 1961 [v. 16, no. 1] p. 110-112.

DESCRIPTORS: *Uranium compounds, Salts, Fluorides, Acetates, Nitrates, Oxides, Solutions, Phosphates, Butyl radicals, Uranium alloys, Aluminum alloys, Quantitative analysis, *Chemical indicators, Arsenic compounds, Azo radicals, *Sequestering agents, Reduction (Chemistry), Thiourea derivatives, Dioxides.

On a élaboré une méthode complexométrique de dosage d'uranium, basée sur sa réduction à la tétravalence par l'acide formamine-disulfunique et son titrage avec une solution de complexone III en présence d'Arsénazo I. Cette méthode convient pour le dosage de l'uranium dans ses sels, oxydes, alliages, le tributylphosphate et autres extraits. (Author)

Knobloch, W. and Knobloch, F.
AUTOMATIC COMBUSTION APPARATUS FOR ELEMENTAL MICROANALYSIS. [19 Apr 63] 6p.
Order from OTS or SLA $1.10 63-16420

Trans. of East German pat[ent] 23,509, appl. 14 May 60, issued 2 Aug 62.

DESCRIPTORS: *Microanalysis, Combustion, Laboratory equipment, *Furnaces, Design, *Catalysts, Cobalt catalysts.

The patent involves an automatic combustion apparatus for elemental microanalysis with a hinged combustion furnace and associated catalyst furnace. Two combustion furnaces with lateral openings, which can be moved individually or jointly in the direction of the stationary catalyst furnaces are arranged on a sliding seat so that they can be displaced in opposite directions Between the combustion furnaces, there is a closing

block consisting of a ceramic or similar material which fits into the openings of the furnaces. The catalyst zone is filled preferably with Co_3O_4 supported on pumice.

Lavrukhina, A. K.
DETERMINATION OF THE OXIDES OF MANGANESE OF DIFFERENT VALENCE IN THEIR COMMON OCCURRENCE (Opredelenie Okislov Margantsa Razlichnoi Valentnosti pri Ikh Sovmestnom Prisutstvii). [1963] 15p. 15 refs.
Order from OTS or SLA $1.60 63-16758

Trans. of Zhur[nal] Anal[iticheskoi] Khim[ii] (USSR) 1949, v. 4, no. 1, p. 40-45.
Another trans. is available from NRCC $1.00 as NRCC C-4062, NRCC TT-1035, 1962, 13p.

DESCRIPTORS: *Manganese compounds, Oxides, Dioxides, Valence, Determination, Solubility.

Investigated solubility of different oxides of manganese in solutions (1) 6 N $(NH_4)2SO_4$; (2) 6 N NH_4Cl; (3) $CH_3COOH + Na_2SO_3$; (4) $H_2SO_4 + HF + KF$ and (5) $H_2SO_4 + HPO_3$. In the results it is found that 6 N $(NH_4)_2SO_4$ extracts from the mixtures of oxides MnO; a mixture of HPO_3 and $H2SO_4$ extracts Mn_2O_3 and leaves behind MnO_2. On this basis of the proposed method of determining MnO, Mn_2O_3 and MnO_2 in their common occurrence checked with artificial mixtures and adapted to the analysis of manganese ores. (Author)

Lilova, O. M. and Preobrazhenskii, B. K.
SÉPARATION PAR ÉCHANGE IONIQUE DES ÉLÉMENTS. VI. ELÉMENTS ALCALINO-TERREUX (Ionoobmennoe Razdelenie Elementov. VI. Shchelochnozemel'nye Elementy) [Separation of Elements by Ion-Exchange. VI. Earthy Alkali Elements]. tr. by Mme. Mihailovic. 30 Aug 62 [12]p. (foreign text included) 6 refs. CEA Trans. no. R 1654.
Order from OTS or SLA $1.60 63-15482

Trans. in French of #Radiokhimiya (USSR) 1960, v. 2, no. 6, p. 731-733.

DESCRIPTORS: *Alkaline earth metals, Separation, *Ion exchange, Ion exchange resins, Styrene plastics, Complex compounds, Synthesis, Reagents, Ammonium compounds, Acetates.

Lintner, C. J.
THE COMPOUNDS OF STARCH WITH ALKALINE EARTHS. [1963] 9p. 3 refs.
Order from SLA $1.10 63-16361

Trans. of Angewandte Chemie (Germany) 1888, no. 8, p. 232-236.

DESCRIPTORS: *Starches, *Alkaline earth compounds, *Carbohydrates, Quantitative analysis, Chemical precipitation, Hydroxides, Strontium compounds, Alcohols, Statistical data.

Marion, F. and Aubry, J.
ANALYSIS OF IRON IN ITS THREE STATES: APPLICATION FOR COMPLETE ANALYSIS OF SPONGE IRON AND DETERMINATION OF METALLIC IRON IN SLAGS. [1963] 12p. 10 refs.
Order from from SLA $1.60 63-16848

Trans. from [Congrés International de Chimie Industrielle (no. 27) Brussels, 1954. Comptes Rendus].

DESCRIPTORS: *Volumetric analysis, *Iron, Iron compounds, Oxides, *Slags, Solutions, Ammonium compounds, Silver compounds, Thiocyanates, Decomposition.

For abstract see Chemical Abstracts 50: 14439, 1956.

Nikitina, O. I.
METODOS ESPECTROQUIMICOS DE ANALISIS DE TODOS LOS COMPONENTES BASICOS DE LAS ESCORIAS DEL HORNO MARTIN (Spektrokhimicheskie Metody Analiza Martenovskikh Shlakov na Vse Osnovnye Komponenty) (Spectrochemical Methods of Analysis of All Basic Open Hearth Slag Components). 8p.
CID: 62-294.
Order from OTS, ETC or CID $0.80 62-29294

Trans. in Spanish of #Akademiya Nauk SSSR. Izvestiya. Seriya Fizicheskaya, 1955 [v. 19] no. 1, p. 94-96.
Another trans. is available in English from CTT.

DESCRIPTORS: Blast furnaces, *Slags, *Optical analysis, *Spectrum analyzers.

Ölschläger, W.
THE ANALYSIS OF IODINE IN DIFFICULTY DECOMPOSABLE (DRIED) BIOLOGICAL SUBSTANCES. [1963] 12p. (fig. omitted) 34 refs.
Order from SLA $1.60 63-16044

Trans. of [Zeitschrift] für Analytische Chemie (West Germany) 1955, v. 146 [no. 1] p. 11-17.

DESCRIPTORS: *Iodine, Dehydrated substances, Grasses, Microanalysis, Blood, Chromic acid, Decomposition, Titration, *Biological products.

Pavlova, S. N., Dryatskaya, Z. V., and Mkhchyan, M. A.
DETERMINATION OF THE CONTENT OF NORMAL METHANIC HYDROCARBONS IN GASOLINE FRACTIONS BY MEANS OF MOLECULAR SIEVES. [1963] 6p. 8 refs.
Order from SLA $1.10 63-18411

Trans. of Khimi[ya] i Tekhnol[ogiya] Topliv i Masel (USSR) 1962, v. 7, no. 3, p. 58-60.

DESCRIPTORS: *Gasoline, Fractionation, *Hydrocarbons, Analysis, *Heptanes, *Octanes, *Benzenes, Methyl radicals, *Absorbants.

Podkletnov, N. E. and Bryanskaya, E. K.
CHROMATOGRAPHIE DE SÉPARATION APPLIQUÉE AUX HYDROCARBURES LIQUIDES DU PÉTROLE (Gazo-Zhidkostnaya khromatografiya zhidkikh neftyan uglevodorodov) (Gas-liquid Chromatography of Liquid Petroleum Hydrocarbons). 9p.
Order from OTS, ETC or CNRS $0.80 62-26484

Trans. in French of Uspekhi Khimii (USSR) 1958, v. 27, no. 11, p. 1354-1360.
Another trans. is available in English from ATS $12.15 as ATS-87L30R [1959] 9p.

DESCRIPTORS: *Petroleum, *Hydrocarbons, Liquids, *Chromatographic analysis, Separation.

Schiebel, W.
THE LIMITS OF ACCURACY IN THE ANALYSIS OF RAW SUGAR BY POLARIZATION. [1963] [16]p.
Order from SLA $1.60 63-16366

Trans. of Zucker (West Germany) 1958, v. 11, no. 8, p. 182-187.

DESCRIPTORS: *Carbohydrates, *Polarographic analysis, Polarization.

The examination of raw sugar through polarization requires above average care and experience. The results will be influenced by a number of factors which are called natural errors occuring in the individual steps of the investigation. It is very important that the methods used by individual laboratories be identical, in order to have differences of 0.1 or 0.2 of a degree of polarization appearing as little as possible. A few suggestions are given. (Author)

Schwaibold, J. and Kohler, M.
THE APPLICATION OF A NEW METHOD FOR THE DETERMINATION OF THE K_2O AND N-CONTENT OF FERTILIZERS. [1963] [14]p. 5 refs.
Order from SLA $1.60 63-16111

Trans. from Landwirtschaftliches Jahrbuch für Bayern (West Germany) 1953, v. 30, no. 1/2.

DESCRIPTORS: *Fertilizers, *Potassium compounds, *Oxides, *Nitrogen, Chemical analysis, Quantitative analysis.

The method for the determination of potassium and ammonium by means of sodium tetraphenylborate (Kalignost) in .1 N acid solution in the cold was applied for the analysis of mixed fertilizers. The determination of potassium by this method is far superior to the perchloric acid method because it can be carried out directly in solutions of hydrochloric, sulfuric, or nitric acid, and because neither Mg, Ca, Al, Fe, Co, Ni, Mn, Cu, or PO_4 interfere. The N determination is carried out in the same precipitation as the K determination. Although the method is indirect, it is equivalent to the distillation method and favored by a high conversion factor for N. The fertilizer sample can be dissolved in acid solution for the determination of potassium, as well as for that of the nitrogen. (Author)

Sloof, A. and Duyn, D. van.
QUALITATIVE ANALYSIS OF ORGANIC SUBSTANCES BY HYDROGENATION (Analyse Qualitative de Substances Organiques par Hydrogenation). [1963] [14]p. (foreign text included) 10 refs.
Order from SLA $1.60 63-16391

Trans. of Rec[ueil des] Trav[aux] Chim[iques des Pays-Bas] (Netherlands) 1940, v. 59, p. 1117-1122.
Another trans. is available from SLA as 58-909.

DESCRIPTORS: *Hydrogenation, *Nitrogen, *Halogens, *Sulfur, Chemical analysis, Quantitative analysis, Organic compounds.

Zarnitskii, S. Kh.
ANALYSE DES GAZ DE LA FABRICATION DE L'ACIDE SULFURIQUE (Analysis of Gases in Sulfuric Acid Production). 3p. FR-2321.
Order from OTS, ETC or CNRS $0.80 62-26445

Trans. in French of [Zavodskaya Laboratoriya] (USSR) 1961, v. 27, no. 2, p. 138-139.

DESCRIPTORS: *Sulfuric acid, Production, *Waste gases, Sulfur compounds, Oxides, Chemical analysis.

Vedeneeva, N. E.
THE APPLICATION OF CHROMATOGRAPHIC ADSORPTION TO THE ANALYSIS OF CLAYS. [1963] 8p. 7 refs.
Order from OTS or SLA $1.10 63-14606

Trans. of Akademiya Nauk SSSR. Doklady, 1945, v. 50, p. 429-432.

DESCRIPTORS: *Clay, Adsorption, Dyes, Tests, *Chromatographic analysis, *Clay minerals.

Inorganic Chemistry

PROCEDURE FOR THE PRODUCTION OF HYDROFLUORIC ACID FROM SILICON TETRAFLUORIDE. [1963] 4p.
Order from OTS or SLA $1.10 63-14533

Trans. of Italian patent 355,502, cl. XXIV, appl. 10 Sep 37, released 8 Jan 38, by Società Anomima Processi Privative Industriali.

DESCRIPTORS: *Hydrogen compounds, *Fluorides, Inorganic acids, *Silicon compounds, Carbon, Chemical reactions.

PROCESS FOR THE PREPARATION OF CHLORINE BY THE REACTION OF HYDROGEN CHLORIDE GAS WITH OXYGEN. [1963] 3p.
Order from OTS or SLA $1.10 63-16021

Trans. of German patent application I 66,695, IVb/12 i, 17 July 41, by I. G. Farben A.G. (PB-68405).

DESCRIPTORS: *Chlorine, *Hydrogen compounds, *Chlorides, *Oxygen, Gases, Chemical reactions, Catalysis, Fused materials, Synthesis.

PRODUCTION OF MAGNESIUM HYDROXIDE. [1963] 4p.
Order from OTS or SLA $1.10 63-16065

Trans. of German patent 661,173, n.d.

DESCRIPTORS: *Magnesium compounds, *Hydroxides, Chlorides, Calcium compounds, Dolomite, Oxides, Decomposition.

Boguslavskii, N. M., Vol'fkovich, S. N. and others.
PREPARATION OF HYDROGEN FLUORIDE FROM SiF_4. [1963] 6p. (figs. tables omitted).
Order from OTS or SLA $1.10 63-14165

Trans. of Khim[icheskaya] Prom[yshlennost'] (USSR) 1961 [no. 7] p. 450-452.
Another trans. is available from OTS or SLA $1.60 as 62-13583, FTD-TT-61-105, 23 Oct 61 [11]p.

DESCRIPTORS: *Hydrogen compounds, *Fluorides, *Silicon compounds, Phosphates, Ammonium radicals, Decomposition, Costs, Chemical reactions.

For abstract see Technical Translations 7:783, 1962.

Brasseur, P[aul].
A STUDY OF THE PRODUCTS OF THERMAL COMBINATION OF Fe_2O_3 AND P_2O_5. [1963] [18]p. 6 refs.
Order from SLA $1.60 63-14743

Trans. of Société Chimique de France Bull[etin] 1946, p. 261-265.

DESCRIPTORS: *Iron compounds, *Phosphorous compounds, Oxides, *Phosphates, Synthesis (Chemistry), Calcination, X-ray deffraction analysis, Ultraviolet spectroscopy, Magnetic properties.

Caillet, Roger.
CONTRIBUTION TO THE STUDY OF SILICON FLUORIDE AND OF THE FLUOSILICATES. [1963] 7p. (figs. omitted).
Order from SLA $1.10 63-16092

Partial trans. (p. 377-382, 407-411) of Ann[ales] de Chim[ie] (France) 1945, ser. 11, v. 20, p. 367-420.

DESCRIPTORS: *Silicon compounds, *Fluorides, *Silicates, Glass, Boron compounds, *Dissociation, Physical properties, Chemical properties, Chemical reactions, Phase studies.

Dubnikov, L. M. and Zorin, N. I.
PREPARATION OF SULPHUR MONOFLUORIDE AND ITS PROPERTIES [Poluchenie i Svoistva Monoftorida Sery]. [1963] 13p. (figs. omitted) 4 refs.
Order from OTS or SLA $1.60 63-14408

Trans. of [Zhurnal Obshchei Khimii] (USSR) 1947, v. 17, no. 2, p. 185-192.
Other translations are available from SLA as R-1388, 19p. and RT-1697, 13p.

DESCRIPTORS: *Sulfur compounds, *Fluorides, Lead compounds, Zinc compounds, Metallic compounds, Oxides, Metals, Oxidizers, Chemical analysis, Chemical reactions, Hydrolysis, Reaction kinetics.

Ferrari, A. and Tani, E.
CESIUM AND RUBIDIUM IODOAURATES. 26 Feb 63 [4]p. 13 refs.
Order from SLA $1.10 63-16406

Trans. of Gazz[etta] Chim[ica] Ital[iana] 1959, v. 89, p. 502-504.

DESCRIPTORS: *Cesium compounds, *Rubidium compounds, *Iodides, *Gold compounds, Synthesis. (Chemistry).

It is shown that, in the preparation of cesium and rubidium iodoaurates by the combination of iodides with chloroauric acid, compounds $M_2Au^{I}Au^{III}I_6$ are obtained rather than products of the formula $MAuI_4$. (Author)

Ferrari, A., Cavalca, L., and Nardelli, M.
SOME CHLOROAURATES AND A CASE OF EXTENSIVE MASS ISOMORPHISM. 5 Mar 63 [13]p. 6 refs.
Order from SLA $1.60 63-16426

Trans. of Gazz[etta] Chim[ica] Ital[iana] 1955, v. 85, p. 137-144.

DESCRIPTORS: *Gold compounds, *Oxides, *Rubidium compounds, *Palladium compounds, *Chlorides, *Cesium compounds, *Copper compounds, *Crystal lattices, Molecular structure, Crystallization.

Rubidium palladium chloroaurate and cesium palladium chloroaurate were prepared, for which the formulas were shown to be $Rb_4PdAu_2Cl_{12}$ and $Cs_4PdAu_2Cl_{12}$, rather than $Rb_2PdAuCl_7$ and $Cs_2PdAuCl_7$. The lattices of these compounds can be referred to a body-centered cubic cell with sides of 20.53 ± 0.02 A and 20.91 ± 0.01 A, respectively, containing 16 molecules. Also prepared were cesium copper chloroaurate, $Cs_4CuAu_2Cl_{12}$, $Rb_4CuAu_2Cl_{12}$, the latter for the first time; the powder photograms of both compounds proved analogous to those of the preceding compounds, and their lattice constants, referred to a cubic cell also containing 16 molecules, are 20.94 ± 0.03 Å and 20.55 ± 0.02 Å, respectively. The lattice of the compounds listed above shows a "substructure" formed by the large alkali metal ions and by the chloride ion, which is found in many compounds in which the ratio of alkali metal to chlorine is 1:3, such as $CsHgCl_3$, $CsCdCl_3$, $Cs_3As_2Cl_9$, $Cs_3Bi_2Cl_9$, independently of the number of small cations and of the lattice symmetry. (Author)

Flis, I. E., Salnis, K. Yu., and Mishchenko, K. P.
THERMOCHEMICAL STUDY OF THE REACTION OF CHLORINE DIOXIDE WITH HYDROGEN PEROXIDE.
Aug 63, 5p. (1 fig. omitted) 11 refs.
Order from ES $4.00

Trans. of #Zhur[nal] Neorg[anicheskoi] Khim[ii] (USSR) 1957, v. 2 [no. 7] p. 1471-1473.

DESCRIPTORS: *Peroxides. *Hydrogen compounds, *Chlorine compounds, *Dioxides, Chemical reactions, Thermochemistry.

Gallo, G. and Guerra, M. del.
THE ACTION OF HYDROGEN ON THE METALLIC OXIDES AND SULFIDES, NOTE VI. [1963] [12]p. 10 refs.
Order from SLA $1.60 63-16843

Trans. of Ann[ali di] Chim[ica] (Italy) 1951, v. 41, p. 51-60.

DESCRIPTORS: *Ores (Metal sources), *Cadmium compounds, *Bismuth compounds, *Tin compounds, *Lead compounds, *Zinc compounds, *Manganese compounds, *Cobalt compounds, *Nickel compounds, *Silver compounds, Oxides, Sulfides, Reduction, Desulfurization, *Hydrogen.

Gay-Lussac and Thenard.
METALS PREPARED FROM KOH AND NaOH: EXCERPTS FROM VARIOUS NOTES. [1963] 9p.
Order from SLA $1.10 63-16152

Trans. of Moniteur Universel (France) 1808, no. 148, p. 581-582.

DESCRIPTORS: *Hydroxides, *Potassium compounds, *Sodium compounds, Metals, Chemical reactions.

Hoki, Rokuro, Murata, Sumio and others.
WET PROCESS OF MANUFACTURING PHOSPHORIC ACID WHEREIN GYPSUM OF GOOD QUALITY IS OBTAINED AS A BY-PRODUCT. July 63, 22p. (figs. omitted).
Order from SA $28.00 SA Code-P-166

Trans. of published Japanese patent 3701/1962, cl. 1, 2 15-B-53 (15-C-321) appl. no. 42579/1960 filed 26 Oct 60, pub. 7 June 62, by Nissan Kagaku Kogyo Inc.

DESCRIPTORS: *Ores (Non-metallic), Processing, *Phosphoric acids, Manufacturing methods, *Gypsum, Production, Crystallization

Kakabadze, V. M. and Ivanova, T. A.
NEW METHOD OF PRODUCING CAUSTIC SODA [Novyi Sposob Polucheniya Edkogo Natra]. [1963] 7p. (figs. omitted) 7 refs.
Order from OTS or SLA $1.10 63-16107

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1954, v. 94 [no. 4] p. 733-735.
Another trans. is available from SLA as RT-2727.

DESCRIPTORS: *Sodium compounds, Hydroxides, Production, Sulfates, *Desulfurization, Manganese compounds, Peroxides.

Sodium sulfate (mirabilite) serves as the raw material. By a reducing calcination of sodium sulfate at a temperature of 850-1000° one obtains sodium sulfide. As the desulfurizing substance a manganese peroxide ore was chosen which contains a high percentage of MnO_2. The NaOH solution obtained under optimal conditions has a concentration of 117-120 g/l. and satisfied standard requirements in its composition.

Mizumachi, Kunuhiko.
ANION EXCHANGE OF COBALT (II) COPPER (II), AND ZINC (II) CHLORO COMPLEXES. Rept. no. 2 [of] Anion Exchange Equilibrium of Metal. [1963] 24p. (figs. omitted) 25 refs.
Order from SLA $2.60 63-14019

Trans. of Nihon Kagaku Zasshi (Japan) 1962, v. 83, no. 1, p. 67-72.

DESCRIPTORS: *Complex compounds, *Cobalt compounds, *Copper compounds, *Zinc compounds, Mercury compounds, Lithium compounds, *Chlorides, Hydrochloric acid, *Ion exchange, Chemical equilibrium.

The distribution coefficients of cobalt (II), copper (II) and zinc (II) between a hydrochloric acid-lithium chloride mixture and anion exchange resins were measured at 25°C. The distribution coefficient is generally higher for a higher chlorine ion concentration and a lower hydrogen ion concentration. From the result for a chloride concentration of 10 mol/1, the ion exchange equilibrium constant and the complex acid formation constant were calculated for each metal. Separately, the distribution coefficient of copper (II) in an aqueous chloride solution-methylisobutylketone system was measured and compared with the distribution constant for anion exchange; it was shown that the complex acid formation makes a contribution to the equilibrium. Using the measurement results of an anion exchange of mercury (II), equations are derived for the estimation of component ratios of tetrachloro complex ions of divalent metals in lithium chloride solutions of various concentrations and the results are applied to these three metals. (Author)
(See also 63-14017)

Mizumachi, Kunihiko.
ANION EXCHANGE OF THE CHLORO COMPLEX IONS OF TELLURIUM (IV). Rept. no. 3 [of] Anion Exchange Equilibrium of Metal. [1963] 16p. (figs. omitted) 11 refs.
Order from SLA $1.60 63-14018

Trans. of Nihon Kagaku Zasshi (Japan) 1962, v. 83, no. 1, p. 73-76.

DESCRIPTORS: *Complex compounds, *Tellurium compounds, Lithium compounds, Chlorides, Hydrochloric acid, *Ion exchange, Chemical equilibrium, Acid-base equilibrium.

The distribution coefficient of tellurium (IV) from a hydrochloric acid-lithium chloride mixture with anion exchange resins was measured at 25°C. The distribution coefficient has a larger value generally when the chlorine ion concentration and hydrogen ion concentration are high. This tendency is entirely opposite to that of mercury (II). The effect of the acid concentration was more significant when the chlorine ion concentration was lower; in a 4 mol/l hydrochloric acid the distribution coefficient is 360, but it was zero in a lithium chloride solution of the same concentration. However, in a 10 mol/l chloride solution, regardless of the acid concentration, the distribution coefficient was 4×10^3. The ion exchange of all five metals was classified according to the distribution coefficient, and the acid-base reaction of complex bodies is shown to have an effect on the formation reaction of complex substances in an aqueous solution. (Author)
(See also 63-14019)

Mizumachi, Kunihiko.
ANION EXCHANGE OF THE MERCURY (II) CHLORO COMPLEX. Rept. no. 1 [of] Anion Exchange Equilibrium of Metal. [1963] 27p. (figs. omitte) 41 refs.
Order from SLA $2.60 63-14017

Trans. of Nihon Kagaku Zasshi (Japan) 1962, v. 83, no. 1, p. 61-67.

DESCRIPTORS: *Complex compounds, *Mercury compounds, Lithium compounds, Chlorides, Hydrochloric acid, *Ion exchange, Chemical equilibrium, Methyl radicals, Butyl radicals, Ketones.

Exchange equilibria of various metal anions in a mixture of hydrochloric acid-lithium chloride solutions were measured at 25°C. Equations were derived for calculating the anion exchange equilibrium constants, various equilibrium constants in the solution, and ratios of complex substances in the solutions, from the values of the distribution coefficients. The investigation proceeds on the basis of the acid-forming properties of the tetrachloro-complex anion. Experiments were carried out with mercury (II). The distribution coefficient of mercury (II) on anion exchange resins was smaller when both the chlorine ion concentration and the hydrogen ion concentrations were greater. In the case of a chloride concentration above 4 mol/l, the equilibrium constant is calculated from the above theoretical equation. When the chlorine ion concentration was 10 mol/l, the acid-forming constants of $HgCl_4^{2-}$ and $HHgCl_4^-$ were 5.5 and 0.9, respectively, and their ion exchange equilibrium constants are 3.4×10^5 and 1.8×10^3, respectively. The distribution coefficient of mercury (II) in an aqueous chloride solution-methylisobutylketon system was also determined and the result compared with the value of the distribution coefficient of anion exchange to show the contribution of the acid-forming of mercury (II) tetrachloro-complex ion to the equilibrium. (Author)

Murakami, Keiichi and Tanaka, Hirobumi.
STUDY OF CALCIUM SULFATE PRODUCED AS A BY-PRODUCT FROM THE MANUFACTURE OF PHOSPHORIC ACID. [1963] 16p. 5 refs.
Order from SLA $1.60 63-16119

Trans. of Sekko to Sekkai (Japan) [1955, no. 18] p. 841-945.

DESCRIPTORS: *Calcium compounds, *Sulfates, Phosphoric acids, Hydration, Gypsum, Phosphates, Decomposition, Sulfuric acid.

The transition curve between $CaSO_4 \cdot 1/2\,H_2O$ and $CaSO_4 \cdot 2H_2O$ in phosphoric acid was determined by Nordengren and his co-workers in 1930 (U.S. Patent 1,776,595). Later investigators have shown this curve to be inaccurate. This work confirms the curve produced by the later workers by the following results: (1) $CaSO_4 \cdot 1/2H_2O$ may exist in a metastable zone below the corrected curve. (2) But in this zone it slowly hydrates to $CaSO_4 \cdot 2H_2O$ when seeded with the dihydrate. (3) In the actual production of phosphoric acid from phosphate rock and sulfuric acid, the decomposition of the phosphate rock takes place in two ways. In one of them, the phosphate rock dissolves in excess phosphoric acid to produce monocalcium phosphate which then reacts with the sulfuric acid. Even in this case the form of the calcium sulfate produced was in accordance with the corrected transition curve. (Author)

Nikitina, E. A.
PURIFICATION OF TECHNICAL SODIUM BICHROMATE AND PRODUCTION THEREOF OF CHROMIC ANHYDRIDE. [1963] 9p. 7 refs.
Order from OTS or SLA $1.10 63-14126

Trans. of Institut Chistykh Khimicheskikh Reaktivov. Trudy (USSR) 1930, v. 9, p. 161-167.

DESCRIPTORS: *Sodium compounds, *Chromates, *Chromium compounds, Oxides, Purification, Crystallization, Recrystallization.

Plate, N. A., Prokopenko, V. V., and Kargin, V. A.
POLYMERIZATION OF CERTAIN MONOMERS DURING DISPERSION OF INORGANIC SUBSTANCES. [1962] 9p. (figs. omitted) 13 refs.
Order from OTS or SLA $1.10 62-18818

Trans. of Vysokomolekulyarnye Soedineniya (USSR) 1959, v. 1, no. 11, p. 1713-1720.

DESCRIPTORS: *Inorganic substances, *Polymerization, Molecular structure, Chemical reactions, Exchange reactions, Polymers, Production, Dispersion hardening.

Rodionova, N. I. and Khodakov, Yu. V.
THE MECHANISM OF HYDRATION OF THE VOLATILE MODIFICATION OF PHOSPHORIC ANHYDRIDE [Mekhanizm Gidratatsii Letuchei Modifikatsii Fosfornogo Angidrida]. [1963] [12]p. 4 refs.
Order from OTS or SLA $1.60 63-16122

Trans. of [Zhurnal Obshchei Khimii (USSR) 1950, v. 20, p. 1347-1357].
Other translations are available from SLA as RT-3594, 23p. and $3.60 as R-03040, 14p.

DESCRIPTORS: *Phosphorus compounds, Anhydrides, Vapors, *Hydration, Reaction kinetics, *Phosphoric acids.

It was shown experimentally that all the previously proposed mechanisms for the hydration of phosphoric anhydride and all the experimental investigations of of this process are inadequate, as they do not take into account the participitation in the process of the higher polyphosphoric acids as intermediate products; these are the tetrapoly acid $H_6P_4O_{13}$ and the tripoly acid $H_5P_3O_{10}$. The process of hydration of the volatile modification of phosphoric anhydride P_4O_{10} both in acid and in alkaline medium takes place corresponding to the mechanism which was deduced from the theory of structure of anhydrides and higher phosphoric acids. (Author)

Samsonov, G. V., Makarenko, G. N., and Kosolapova, T. Ya.
PREPARATION AND PROPERTIES OF YTTRIUM MONOCARBIDE. [1963] 5p. 8 refs.
Order from OTS or SLA $1.10 AEC-tr-4997

Trans. of Zhur[nal] Priklad[noi] Khim[ii] (USSR) 1961, v. 34 [no. 7] p. 1444-1448.

DESCRIPTORS: *Yttrium compounds, *Carbides, Synthesis, Reduction (Chemistry), Chemical properties, Physical properties, Electrical properties.

In experiments on conditions for obtaining yttrium monocarbide by reduction of yttrium oxide with carbon in a vacuum, it was shown that YC is formed by heating a stoichiometric mixture of the reactants at 1900°. The physical properties of yttrium monocarbide were found to be: specific microhardness 120 kg/mm^2, melting point 1950 ± 20°, specific electro-resistance 4 x 10^4 μohm/cm, thermoelectromotive force 34.8 μv/degree, and coefficient of thermal expansion 1.36 x 10-6 per degree; the chemical stability of YC in various media was also determined. (Author)

Schwarb, Robert and Giese, Hermann.
TITANIUM PEROXYHYDRATE (Über die Peroxyde des Titans, Zirkons, Hafniums und Thoriums. Titanperoxydhydrat). [1963] [9]p. (foreign text included).
Order from SLA $1.10 63-16764

Partial trans. (p. 210-213) of Z[eitschrift für] Anorg[anische] u[nd] Allg[emeine] Chem[ie] (Germany) [1929] v. 176, p. 209-232.

DESCRIPTORS: *Titanium compounds, *Hydrates, *Peroxides, Chemical properties, Physical properties, Molecular structure.

Seel, Fritz, Fuchs, Gerald, and Werner, Dietmar.
THE REACTION OF NITROGEN DIOXIDE WITH HYDROGEN FLUORIDE. 13 Mar 63, 9p. 7 refs.
Order from SLA $1.10 63-16531

Trans. of Chemische Berichte (West Germany) 1963, v. 96 [no. 1] p. 179-183.

DESCRIPTORS: *Nitrogen compounds, *Dioxides, *Hydrogen compounds, *Fluorides, *Oxyfluorides, *Chemical reactions, Chemical equilibrium, Boiling, Mixtures.

Nitrogen dioxide gas reacts with liquid hydrogen fluoride to form nitrosylfluoride-trihydrogen fluoride, nitrosylfluoride-hexahydrogen fluoride, and nitric acid, the proportions of the two nitrosyl fluoride-hydrogen fluorides being determined by the rate of formation. If an NO_2/HF mixture is distilled at normal pressure to a 1:3 molar ratio, equilibria are set up which lead to the formation of an azeotropic mixture $NOF(HF)_6$ + 1.87 HNO_3, boiling at 52°, and to $NOF(HF)_3$. Due to the nitrosyl fluoride content, NO_2/HF mixtures react similarly to nitrosyl fluoride-hydrogen fluorides. (Author)

Tammann, G. and Nikitin, N.
CONCERNING THE PYROPHORITY OF METAL POWDERS. [1963] [6]p. (figs. omitted) 12 refs.
Order from SLA $1.10 63-16767

Trans. of Z[eitschrift für] Anorg[anische] u[nd] Allg[emeine] Chem[ie] (Germany) 1924, v. 135, p. 201-204.

DESCRIPTORS: *Metal powders, *Pyrophoric materials, Combustion, Flammability.

Wehner, G.
THE BASIC CHLORIDES OF MAGNESIUM. [1963] [3]p. 2 refs.
Order from SLA $1.10 63-16112

Partial trans. of Z[eitschrift für] Anorg[anische und] Allg[emeine] Chemie (East Germany) 1953, v. 272, p. 202-204.

DESCRIPTORS: *Magnesium compounds, *Chlorides, Pyrolysis, Diffraction analysis, Physical properties.

Organic Chemistry

DIAZOTYPE PRODUCT DEVELOPABLE BY HEAT. [1962] 20p.
Order from OTS or SLA $1.60 62-16390

Trans. of French patent 597,307, by Établissements Bauchet & Cie, subject of a first appl. filed 25 Nov 59 under the number 811 009.

DESCRIPTORS: *Azo compounds, *Ethyl radicals, Nitrogen compounds, Organic compounds, Dissociation, *Thermal radiation, Chemical reactions, *Heating

MÉTHODE DE PRÉPARATION DU SULFATE D'HYDROXYLAMINE (Preparation of Hydroxylamine Sulfate). 6p. FX-836.
Order from OTS, ETC or CNRS $0.80 62-26440

Trans. in French of [published] Japanese patent 317-1960 by Société Anonyme de Rayonne de Toyo, Tokyo, pub. 19 Jan 60.

DESCRIPTORS: *Amines, *Hydroxides, *Sulfates,

PREPARATION OF ALKALI ALCOHOLATES.
20 Sep 48 [3]p.
Order from OTS or SLA $1.10 63-10959

Trans. of German patent application by [I. G. Farbenindustrie A. G., Leverkusen] (PB-20545).

DESCRIPTORS: *Metalorganic compounds, *Alkali metal compounds, Alcohols, *Sodium compounds, Propanols, *Butanols, Heptanes, Synthesis (Chemistry), Organic solvents.

The invention involves a method of preparation of alkali alcoholate, free of alcohol of crystallization from alkali metal and the corresponding alcohol, characterized by the fact that the alkali metal is extracted by the alcohol under reflux in the presence of an indifferent solvent. A solvent is used whose b.p. lies slightly higher that that of the alcohol used. (Author)

PROCEDURE FOR THE PREPARATION OF SULPHONATED OILS AND FATS WITH A HIGH SO_3 CONTENT. [1963] 2p.
Order from OTS or SLA $1.10 63-16006

Trans. of French patent 636,586, 1928.

DESCRIPTORS: Preparation, *Oils, Fats, Oxides, Sulfur compounds, Waxes, *Sulfonation.

PROCESS FOR THE PREPARATION OF ALKYLENE OXIDE ADDITION PRODUCTS. [1963] 4p.
Order from OTS or SLA $1.10 63-14349

Trans. of Belg[ian patent] 593,558, filed 31 July 59, by Bohme Fettchemie.

DESCRIPTORS: *Alcohols, *Ethers, *Propenes, Oxides, Chemical reactions, Addition reactions, *Foaming inhibitors.

The invention concerns a process for production of low foam alkylene oxide addition products characterized by the fact that propylene oxide is added to the ethylene oxide addition products of high mw. compounds having reactive hydrogens and linked through O, S, or N. Sufficient propylene oxide is added to ethylene oxide addition products to eliminate foaming of the adduct in aqueous solution at a given temp. (Author)

PROCESS FOR DECOMPOSING CELLULOSIC PLANT MATERIAL. [1963] 3p.
Order from OTS or SLA $1.10 63-16083

Trans. of French patent 736,717, 12 Sep 38.

DESCRIPTORS: Decomposition, *Cellulose, Plants (Botany), Potassium compounds, Sulfur compounds.

PROCESS FOR THE PREPARATION OF HIGHLY SULFONATED OILS PARTICULARLY RESISTANT TO COLD AND MAGNESIA. [1963] [2]p.
Order from OTS or SLA $1.10 63-16010

Trans. of French patent 657,799, n. d.

DESCRIPTORS: *Oils, *Sulfonation, Processing, Peroxides, Temperature, Cooling, Magnesium.

PRODUCTION OF COLORLESS SULFONATED OILS. [1963] 5p.
Order from OTS or SLA $1.10 63-16011

Trans. of French patent 658,094, by Erba A. G.

DESCRIPTORS: *Oils, Mineral oils, Vegetable oils, Fats, Waxes, Bleaching agents, *Sulfonation, Processing, Oxidation, *Bleaching.

SEPARATION OF METAL ALCOHOLATES FREE OF ALCOHOL OF CRYSTALLIZATION. [Verfahren zur Herstellung von Kristall-Alkoholfreien Metall-Alkoholaten]. 20 Sep 48, 4p.
Order from OTS or SLA $1.10 63-10957

Trans. of German patent application [I 78,217 IVd/12o, Sep 44] addition to patent application J 70,592 IVd/12o, by [I. G. Farbenindustrie A. G., Leverkusen] (PB-33856).

DESCRIPTORS: *Metalorganic compounds, *Alkali metal compounds, *Alcohols, Separation, *Sodium compounds, *Methanols, *Propanols, *Butanols, Crystallization.

The invention concerns a process for the separation of alkali alcoholate by extraction of alkali metal with a mixture of an alcohol and an inert distillable dilution agent, characterized by the fact that during the entire reaction period the amount of alcohol is adjusted to that required for formation of an alcoholate containing alcohol of crystallization, and the excess alcohol is then separated with the vapors of the dilution agent. The alcohol of crystallization is removed with the vapors of the dilution agent from a crystal-alcohol-containing alkali alcoholate prepared in any suitable manner, which is advantageously suspended in as fine a state of subdivision as possible in the inert distillable dilution agent having a higher boiling point than the alcohol. (Author)

Akazome [Giichi] Sakai [Shizuyoshi] and Murai [Koichi]. COPOLYMERISATION DES ALCOYL VINYLETHERS SUPÉRIEURS ET DES ESTERS MALEIQUES (Copolymerization of Higher Alkyl Vinly Ethers with Maleic Anhydride). Pt. 7 of Copolymerization of Higher Alkyl Vinyl Ethers. 10p. 8 refs.
Order from OTS, ETC or CNRS $0.80 62-26485

Trans. in French of Kobunshi Kagaku (Japan) 1960, v. 17 [no. 186] p. 618-621.

DESCRIPTORS: *Vinyl radicals, *Ethers, *Copolymerization, Malic anhydride, Esters, Benzyl radicals, Peroxides, *Alkyl radicals.

For abstract see Technical Translations: 1, 267, 1962.

Akazome, G., Sakai, S. and others.
COPOLYMERIZATION OF HIGHER ALKYL VINYL ETHERS. IX. MONOMER REACTIVITY RATIONS OF HIGHER ALKYL VINYL ETHERS. [1963] 6p.
Order from ATS $8.00 ATS-22Q69J

Trans. of Kobunshi Kagaku (Japan) 1960, v. 17 [no. 186] p. 627-630.

DESCRIPTORS: *Alkyl radicals, *Vinyl radicals, *Ethers, *Copolymerization, Polymerization, Chemical reactions.

Alder, Kurt and Flock, Frans Heinz.
SYNTHESIS OF 8, 9-DIHYDRO-INDENE FROM DICYCLOPENTADIENE. [1963] [8]p. (formulas omitted) 5 refs.
Order from SLA $1.10 63-14027

Trans. of Chem[ische] Ber[ichte] (West Germany) 1954, v. 87, p. 1916-1922.

DESCRIPTORS: *Indene, *Pentadienes, *Cyclopentadiene, Synthesis.

Dicyclopentadiene is converted by means of selenium dioxide in the presence of acetanhydride into an acetoxy compound. The alcohol obtained by its saponification gives, upon oxidation, a ketone which, subjected to pyrolysis, suffers a retro-diene decomposition. In the recombination of the split parts, there is a generation of CO with the formation of 8.9-dihydroindene as main product and 8.9-dihydro-indene-on-(3) as byproduct. (Author)

Andrianov, K. A.
POLYMERS WITH INORGANIC MAIN CHAINS. 22 July 63, 664p. 577 refs. JPRS: 20272.
Order from OTS $7.75 63-31341

Trans. of mono. Polimery s Neorganicheskimi Glavnymi Tsepyami Molekul [Moscow] 1962, 327p.

DESCRIPTORS: *Polymers, *Inorganic compounds, *Molecular structure, *Polymerization, *Metalorganic compounds, *Silicones, Chemical analysis.

Contents:
Reactions for formation of high-molecular compounds with inorganic molecular chains
Chemical composition, structure and properties of polymers with inorganic molecular chains
Methods of obtaining polyorganosiloxanes
Polyelementalorganosiloxanes
Polyorganoelementaloxanes

Bakowski, C.
INSTALLATIONS POUR LE CRACKING CATALYTIQUE DES HYDROCARBURES, -SYSTÈME ONIA-GEGI. (Installations for the Catalytic Cracking of Hydrocarbons- System Onia-Gegi). 8p. FX-788.
Order from OTS, ETC or CNRS $0.80 62-26433

Trans. in French of Gaz Woda i Technika Sanitarna (Poland) 1960, v. 34, p. 192-194.

DESCRIPTORS: *Hydrocarbons, *Decomposition, Catalysts.

Bityukov, V. D.
POLYMERES ORGANIQUES POSSEDANT DES PROPRIETES ELECTRIQUES ET MAGNETIQUES (Organic Polymers with Electric and Magnetic Properties). 4p. FR-2325.
Order from OTS, ETC or CNRS $0.80 62-26448

Trans. in French of Akademiya Nauk SSSR. Vestnik, 1960, v. 30, no. 7, p. 99-100.
Other translations are available in English from OTS or SLA $1.10 as SCL-T-366, 26 May 61, 4p. and from OTS or SLA $1.10 as 61-27639, DSIR LLU M. 3210 [1961] [2]p.

DESCRIPTORS: *Polymers, Electrical properties, Magnetic properties.

Cerny, O. and Hajek, J.
PHOTOCHEMICAL CHLORINATION OF HEXANE AND 2. 3-DIMETHYL-BUTANE WITH CHLORINE AND ORGANIC CHLORINATING AGENTS. 14 Apr 62, 10p. (tables omitted) 24 refs.
Order from SLA $1.10 63-14041

Trans. of [Sbornik Chekhoslovatskykh Khimichesykh Rabot] 1961, v. 26, p. 2624-2631.

DESCRIPTORS: *Photochemistry, *Hexanes, *Methyl radicals, *Butanes, Molecular isomerism, *Chlorination, Chlorine, Chlorine compounds, Isocyanic acids, Sulfimides, Succinimides, Imides, Aniline derivatives, Acetimides, Urea derivatives, Hydrazine derivatives, Hypochlorites.

A number of organic chlorination agents containing chlorine bound to nitrogen or oxygen were tested for the chlorination of n-hexane and 2. 3-dimethyl butane to determine the relative reactivity of the C-H bonds of the primary, secondary and tertiary carbon atom. In most cases, an increase of the relative reactivity of the bonds at the secondary and tertiary carbon atom (as compared with the relative reactivity in chlorination with free chlorine) was observed. In some cases there was observed a sharp reduction of the relative reactivity of the tertiary C-H bond. This effect was ascribed to steric factors. (Author)

Domnin, N. A.
INVESTIGATIONS IN THE FIELD OF UNSATURATED CYCLIC HYDROCARBONS AND THEIR HALOGEN DERIVATIVES. VII. CONVERSION OF HALOGEN DERIVATIVES OF CYCLOHEXANE INTO AROMATIC DERIVATIVES. [1963] [13]p. 4 refs.
Order from OTS or SLA $1.60 63-14826

Trans. of [Zhurnal Obshchei Khimii] (USSR) 1946, v. 16, no. 10, p. 1729-1736.

DESCRIPTORS: *Cyclohexane derivatives, Halides, *Bromides, Cyclohexanes, *Benzenes, *Cyclohexenes, *Cyclohexadienes, Synthesis (Chemistry), Bromine, Quinolines, Alcohols, Salts.

It is shown that (1) three products are formed in the process of combining molecular bromine with 1, 2-dibromocyclohexene-1, namely: 1, 1, 2, 2-tetrabromocyclohexane, bromobenzene and o-dibromobenzene; (2) two products are formed when acting with quinoline upon 1, 1, 2, 2-tetrabromocyclohexane: 1, 2-dibromocyclohexene and o-dibromobenzene. (3) Two products are formed when acting with the alcohol alkali upon 1, 1, 2, 2-tetrabromocyclohexane, namely: 1, 2-dibromocyclohexene-1 and 2, 3-dibromocyclohexadiene-1, 3; (4) O-dibromobenzene is formed when acting with quinoline upon the product of combining bromine with 2, 3-dibromocyclohexadiene-1, 3. Schemes are suggested for all such reactions. (Author)

Dreshler, G. and others.
PROCESS FOR THE PRODUCTION OF POLYBENZUL BENZENES. [1963].
Order from TTIS $5.85 TTIS NS-89

Trans. of East Gemany patent 24,757, appl. 19 Sep 59, pub. 21 Feb 63.

DESCRIPTORS: *Benzenes, *Polymers, Synthesis (Chemistry).

Flaschka, H. and Jakobljevich, H.
THE USE OF THIOACETAMIDE IN QUANTITATIVE ANALYSIS. I. DETERMINATION OF ANTIMONY. [1963] 12p. 13 refs.
Order from SLA $1.60 63-16908

Trans. of Analytica Chimica Acta (Netherlands) 1950, v. 4, p. 247-255.

DESCRIPTORS: *Antimony, Sulfides, Chemical precipitation, Quantitative analysis, Amides, Acetyl radicals, Thio radicals.

Thioacetamide is used for the quantitative precipitation of Sb_2S_3 in acid solution. The precipitate, in its red or black modification is dried in a current of CO_2 at 280-300° and weighed after cooling. The black form can also be weighed after drying at 120° and washing with warm CS_2. The results of analysis of Sb_2S_3 -- quantities between 10 and 500 mg. -- are given. The determination as red sulfide gives low results, with an error not exceeding 0.8%. The black modification is more convenient, the error not exceeding 0.2% (for samples of 10 to 500 mg.), an error which corresponds to the precision of the balance. It is shown that the precipitates can well be dissolved and titrated with bromate. The precipitation method with thioacetamide is quick, the precipitates can be filtered well and washed with water without becoming colloidal. (Author)

Fukui, Kenichi; Yoneda, Shigeo and others.
SYNTHESES OF ORGANIC FLUORINE COMPOUNDS BY THE USE OF POTASSIUM FLUORIDE. Rept. no. 8 of Studies on Organic Synthesis Reactions Using Inorganic Salts. [1963] 13p. 32 refs.
Order from SLA $1.60 63-16423

Trans. of Kogyo Kagaku Zasshi (Japan) 1962, v. 65, no. 8, p. 1179-1182.

DESCRIPTORS: *Fluorides, *Potassium compounds, *Amides, *Glycols, Alkyl radicals, Esters, Solvents, Butanes, Benzyl radicals, Acetates, Ethyl radicals, Synthesis (Chemistry).

In the method of synthesizing organic fluorine compounds by the reaction between organic halogen compounds and potassium fluoride, the effects of glycols and acid amides as solvents of the reaction were compared, and in particular, the relationship between the structure of acid amides and the yield of the organic fluorine compounds was studied. When synthesizing corresponding fluorine compounds from alkyl halides, monohalogenoacetic acid esters, etc., acid amides possessing active hydrogen on the nitrogen atom generally demonstrated outstanding effects as solvents, although there were a few exceptions. N, N-Dialkyl acid amides were superior as solvents for the reaction between benzyl chloride and potassium fluoride. 4-Substituted-1-fluorobutanes were synthesized by reacting 4-substituted-1-chlorobutanes and potassium fluoride in ethylene glycol or acetamide, or by reacting 1-fluoro-4-halogenobutanes with various types of inorganic salts in dimethylformamice. (Author)

Furumi, Masayuki, Ando, Yoshihisa and others.
METHOD OF SYNTHESIS OF ACETIC ACID FROM METHANOL AND CARBON MONOXIDE. July 63, 6p. (fig. omitted) 1 ref.
Order from SA $16.00 SA Code-P-161

Trans. of published Japanese patent 4857/1962, cl. 16-B-612 (13-F-1) appl. no. 27605/1959 filed 31 Aug 59, pub. 16 June 62, by Chief of Industrial Technology Agency.

DESCRIPTORS: *Acetic acids, Synthesis (Chemistry), *Methanols, Carbon compounds, Monoxides, Catalysts, *Cobalt catalysts, *Iodine, Iodides, Alkaline metal compounds, Alkaline earth compounds, Ions

Gillet, A. and others.
CONTRIBUTION TO THE STUDY OF THE PYROLYSIS OF VEGETABLE ORGANIC MINERALS. [1962] 25p.
Order from K-H $31.25 K-H 5876 b

Trans. of Recueil des Travaux Chimiques [des Pays-Bas et de la Belgique] (Netherlands) [1931] v. 50, no. 12, p. 239-256.

DESCRIPTORS: Pyrolysis, *Vegetables, *Organic materials, Minerals.

Giltges.
SCIENTIFIC ZETKO EXCHANGE STUDIES ON HIGHLY CHLORINATED AROMATICS. I. PENTACHLOROPHENYLETHER FROM HEXACHLOROBENZENE. [1963] [5]p.
Order from OTS or SLA $1.10 63-16050

Trans. of mono. (report) of I. G. Farbenindustrie A.G., Urdingen Works, Apr 43. 3p. (PB-588).

DESCRIPTORS: *Chlorides, *Phenyl ethers, *Phenols, Synthesis (Chemistry), *Benzenes, Perchloryl radicals, Wood, Paper, Preservation.

Hey, Harry.
METHOD OR IMPROVED PROCEDURE FOR REMOVING LIQUID OILS OR SOLVENTS CONTAINING DISSOLVED OILS AND SUSPENDED MATTER. [1963] [2]p.
Order from OTS or SLA $1.10 63-16002

Trans. of French patent 543,409, 2 Sep 22.

DESCRIPTORS: Processing, *Oils, Separation, *Chemical precipitation, Organic compounds, Cleaning compounds.

Hoberg, Heinz.
TO THE KNOWLEDGE OF SO-CALLED CARBENE REACTIONS, I. [1963] 16p. 32 refs.
Order from SLA $1.60 63-16601

Trans. of [Justus] Liebigs Annalen der Chemie (West Germany) 1962, v. 656, p. 1-9.

DESCRIPTORS: Chemical reactions, *Carbenes, *Alkyl radicals, *Aluminum compounds, *Halides, *Methyl radicals, *Azo radicals, Ethers, *Metal-organic compounds.

Dialkyl aluminum halides react with diazomethane with the formation of halogen methyl aluminum dialkyls. Their etherates are formed in ether. Methyl iodine-diethyl aluminum can be separated as a solid; it decomposes above -10°. Compounds of this type react (in the absence of ether) already with olefins and alkynes respectively below their decomposition temperature with the formation of the corresponding 3-membered ring compounds. It is shown that this ring closure proceeds via metalorganic intermediate products and not via carbenes. Consequences resulting from the above are shown for similar "carbene" reactions. (Author)

Hoberg, Heinz.
TO THE KNOWLEDGE OF SO-CALLED CARBENE REACTIONS, II. [1963] 5p. 2 refs.
Order from SLA $1.10 63-16600

Trans. of [Justus] Liebigs Annalen der Chimie (West Germany) 1962, v. 656, p. 15-17.

DESCRIPTORS: Chemical reactions, *Carbenes, *Alkyl radicals, *Zinc compounds, *Halides, *Methyl radicals, *Azo radicals, Ethers, *Metalorganic compounds.

It is shown that the reaction products of diazomethane and zinc halides behave like the analogous aluminum compounds and do not represent a new type of compound. (Author) (See also 63-16601)

Kargin, V. A., Usmanov, Kh. U., and Aikhodzhaev, B. I.
OBTENSION DE COPOLYMÈRES GREFFÉS PAR OZONISATION DE LA CELLULOSE (Preparation of Graft Copolymers by Ozonation of Cellulose) (Poluchenie privith kopolymerov putem ozonirovaniya tsellulozy) 4p. 5 refs.
Order from OTS, ETC or CNRS $0.80 62-26488

Trans. in French of Vysokomolekulyarnye Soedineniya (USSR) 1959, v. 1, no. 1, p. 149-151.
Other translations in English are available from LC or SLA mi $1.80, ph $1.80 as 60-14252, and as 60-23810, RTS-1487 and from ATS $5.57 as ATS-48N55R.

DESCRIPTORS: *Polymers, Production, *Cellulose, Chemical reactions, *Ozone, Styrenes, Acrylonitriles, Fibers, Graft polymers

For abstract see Technical Translations: 3: 638, 1960.

Kato, Jiro; Hayashi, Izumi and others.
PREPARATION OF AN AMMONIA AQUEOUS SOLUTION OF HYDROGEN CYANIDE AND ITS UTILIZATION: SYNTHESIS OF GLUTAMIC ACID FROM (BETA) CYAN PROPIONALDEHYDE. Rept. no. 5 of Studies on (Beta) Cyanpropionaldehyde. [1963] 13p. (figs. tables omitted) 15 refs.
Order from SLA $1.60 63-16275

Trans. of Kogyo Kagaku Zasshi (Japan) 1962, v. 65, no. 4, p. 552-556.

DESCRIPTORS: *Acrylonitriles, Oxo process, *Glutamic acid, Solvent action, Synthesis (Chemistry), Reduction (Chemistry), *Aldehydes, *Cyano radicals.

Hydrogen cyanide was synthesized in accordance with the Andrussow method which is ordinarily employed as a method for the industrial synthesis of hydrogen cyanide. The gas produced by the reaction (containing hydrogen cyanide) and the remaining ammonia were directly caused to be absorbed into water of ammonia to make an aqueous solution of ammonia of hydrogen cyanide. (Author) (See also 63-16277)

Korshak, V. V., Sosin, S. L., and Alekseeva, V. P.
PREPARATION OF NEW TYPES OF LINEAR POLYMERS BY THE POLYRECOMBINATION REACTION. 20 Feb 62, 8p. 14 refs. [Trans] T.1175; [DSIR] NLL M 8926.
Order from OTS or SLA $1.10 63-15181

Trans. of Akademiya Nauk SSSR. Doklady, 1960, v. 132, no. 2, p. 360-363.
Another trans. is available from ATS $6.75 as ATS-05M44R [1960] 5p.

DESCRIPTORS: *Polymers, Polymerization, *Recombination reactions, *Molecular structure, Molecular weight, Hydrocarbons, Benzenes, Methanes, Synthesis (Chemistry), Stability.

Linear polymers, soluble in benzene and of high molecular weight, were produced from methylphenylacetate, benzyl benzoate, and other compounds.

Insoluble polymers were also formed when ditolylmethane, diisopropyldyphenyl, and benzyl acetate were introduced into the reaction in place of diphenylmethane durene. Linear polymers with aromatic rings in the main chain were prepared. Several starting compounds were given. Polyrecombination leads to a linear polymer with high molecular weight if the starting compound does not contain groups capable of acting as points for polymer chain branching.

Kratochvil, P., Kupcik, F. and others.
OXYDATION PAR L'ACIDE NITRIQUE DE MÉLANGES XYLESES À LA PRESSION NORMALE (Nitric Acid Oxidation of Xylene Mixtures at Normal Pressure). 10p. 17 refs. FX-819.
Order from OTS, ETC or CNRS $0.80 62-26436

Trans. in French of Chemicky Prumysl (Czechoslovakia) 1958, v. 8[33], no. 9, p. 449-455.

DESCRIPTORS: *Xylenes, Mixtures, Oxidation, Nitric acid.

Jezo, I., Babor, K., and Bauer, S.
CONTRIBUTION À L'ÉTUDE DU PHENYL-ACETYL-CARBINOL (II) (Phenylacetylcarbinol). 5p. 9 refs.
Order from OTS, ETC or CNRS $0.80 62-26483

Trans. in French of Chemicke Zvesti (Czechoslovakia) 1952 [v. 6] no. 5/6, p. 277-280.

DESCRIPTORS: Phenyl radicals, Acetyl radicals, Aldehydes, *Cyclohexanes, Decomposition.

Kato, Jiro, Wakamatsu, Hachiro and others.
EFFECTS OF SOLVENTS UPON THE OXO REACTION OF ACRYLONITRILE. Rept. no. 1 of Studies on (Beta) Cyanpropionaldehyde. [1963] 9p. (figs. tables omitted) 15 refs.
Order from SLA $1.10 63-16276

Trans. of Kogyo Kagaku Zasshi (Japan) 1961, v. 64, no. 12, p. 2139-2142.

DESCRIPTORS: *Acrylonitriles, Oxo process, *Glutamic acid, Solvent action, Synthesis (Chemistry), Reduction (Chemistry), *Aldehydes, *Cyano radicals.

The effects of the solvents upon the oxo reactions of acrylonitrile were investigated as the first stage for the synthesis of glutamic acid from (beta) cyan pripion aldehyde through the oxo reaction of acrylonitrile. Different from the ordinary olefines, the effect of the solvent is quite marked in the oxo reaction of acrylonitrile. The solvent not only affects the speed of the reaction but also produces marked differences in the yield of aldehyde. Generally speaking, the velocity of the reaction is greater in such a solvent as will carry out "homomolecular disproportionation" with cobalt carbonyl as a Lewis base as compared with other cases. It was discovered that the difference in the yield of aldehyde stemming from the difference in the solvents used is due to the difference in the extent of the reducing reaction which takes place along with the hydroformylation of acrylonitrile. (Author)

Kato, Jiro, Wakamatsu, Hachiro and others.
SYNTHESIS OF (BETA) CYANPROPIONALDEHYDE BY OXO REACTION. Rept. no. 2 of Studies on (Beta) Cyanpropionaldehyde [1963] 10p. (figs. tables omitted) 16 refs.
Order from SLA $1.10 63-16277

Trans. of Kogyo Kagaku Zasshi (Japan) 1961, v. 64, no. 12, p. 2142-2145.

DESCRIPTORS: *Acrylonitriles, Oxo process, *Glutamic acid, Solvent action, Synthesis (Chemistry), Reduction (Chemistry), *Aldehydes, *Cyano radicals.

It was found that, in the oxo reaction of acrylonitrile, there is less waste of (beta) cyan propion aldehyde in connection with the decomposition of cobalt carbonyl when such solvents as will carry out homomolecular disproportionation with dicobalt carbonyl like Lewis bases are employed than when other solvents are used. As an explanation of this, it is assumed from the change which takes place in terms of time in the infra red absorption spectra when dicobalt carbonyl is oxidized and decomposed that the decomposition takes place under different mechanisms in these two solvents. (Beta) - cyan propion aldehyde and its derivatives and (beta)- cyan propion aldehyde acetals were prepared and their physical properties were clarified. (Author) (See also 63-16276)

Katsumata, Ryuichi, Ueno, Shinji and others.
METHOD OF MANUFACTURING ACETYLENE FROM HYDROCARBONS. July 63, 5p. (figs. omitted).
Order from SA $16.00 SA Code-P-140

Trans. of published Japanese patent 9060/1962, cl. 16-B-122 (16-B-120.11) app. no. 7119/1959 [filed] 9 Mar 59, pub. 23 July 62, by Mitsubishi Kasei Kogyo Co., Ltd.

DESCRIPTORS: *Acetylenes, *Ethylenes, Manufacturing methods, Gases, Liquids, Hydrocarbons, Pyrolysis, Combustion.

Kawaguchi, K., Tsuji, T. and Yamaguchi, S.
PRÉPARATION DE L'ACÉTATE DE GÉRANYLE À PARTIR DU LINALOL (Preparation of Geranolacetate from Linalool). 3p.
Order from OTS, ETC or CNRS $0.80 62-26494

Trans. in French of Japanese patent 101,143, pub. 13 May 33.

DESCRIPTORS: Alcohols, *Acetates, *Boric acids, Acetic acids.

Kolesnikov, I. M., Panchenkov, G. M., and Orlova, A. A.
KINETICS OF THE ALKYLATION OF TOLUENE WITH PROPYLENE OVER AN ALUMINOSILICATE CATALYST. July 63, 5p. 17 refs.
Order from ICE in v. 3, no. 3, $15.00/year

Trans. of Khim[iya] i Tekh[nologiya] Topliv i Masel (USSR) 1962 [v. 7] no. 9, p. 1-[8].
Another trans. is available from ATS $10.50 as ATS-00Q68R [1963] 8p.

DESCRIPTORS: Reaction kinetics, *Alkylation, *Toluenes, Propenes, *Catalysts, *Aluminum compounds, *Silicates, Chemical engineering.

Komatsu, Shinichiro and Futakami, Hisao.
METHOD OF MANUFACTURING SUCCINIC ANHYDRIDE. July 63, 3p.
Order from SA $16.00 SA Code-P-126

Trans. of published Japanese patent 17207/1962, cl. 16-B-621 (13-F-113) appl. no. 28607/1958 filed 8 Oct 58, pub. 23 Oct 62, by Kawakami Laboratory Co., Ltd.

DESCRIPTORS: *Succinic anhydrides, Manufacturing methods, *Maleic anhydrides, Ketones, Hydrogenation, Catalysis, Nickel catalysts

Korshak, V. V., Gribova, I. A., and Andreeva, M. A.
ORGAN[O]PHOSPHORUS POLYMERS. REPT. 1. POLYMERIZATION OF CYCLIC ALKYL-AND ARYLPHOSPHINIC ACID ESTERS. [1963] 12p. (formulas tables omitted) 13 refs.
Order from OTS or SLA $1.60 63-16288

Trans. of #[Akademiya Nauk SSSR. Otdelenie Khimicheskikh Nauk. Izvestiya] 1957, no. 5 [p. 631-637].
Another trans. is available from ATS as ATS-52J17R.

DESCRIPTORS: *Phosphorus compounds (Organic), *Polymers, Alkyl radicals, Methyl radicals, Chlorides, Butyl radicals, Phenyl radicals, *Phosphinic acids, *Glycols, Methanes, Ethylenes, Esters, Polymerization.

A synthesis was made of the cyclic ethers (esters) of methyl-1, alpha-chloromethyl-, butyl- and phenyl phosphinic acids and of the following glycols: ethylene glycol, Trimethylene glycol, tetramethylene glycol, pentamethylene glycol and diethylene glycol. An investigation was made of the polymerization of penta-, hexa-, hepta- and octa-membered cyclic esters (esters) of phosphinic acids. It was shown that the greatest affinity to polymerization is possessed by penta-(five)-membered cyclic ethers (esters) of phosphinic acids.

Manchot, W. and Herzog, J.
THE AUTOXIDATION OF HYDRAZOBENZENE. [1963] 12p. 3 refs.
Order from SLA $1.10 63-16023

Trans. of [Justus Liebigs] Ann[alen der Chemie] (Germany) 1901, v. 316, p. 331-332.

DESCRIPTORS: *Hydrazines, *Phenyl radicals, Oxidation, Hydrogen compounds, *Peroxides, *Azo radicals.

Matsui, Koji.
RÉACTIONS DU CHLORURE CYANURIQUE ET DE LA CHLORO-S-TRIAZINE (Reactions of Cyanuric Chloride and Chloro-s-Triazine). 26p. 109 refs.
Order from OTS, ETC or CNRS $0.98 62-26491

Trans. in French of Yuki Gosei Kagaku Kyokai Shi (Japan) 1959, v. 17, no. 9, p. 528-544.

DESCRIPTORS: Cyanuric acid, *Chlorine compounds, *Triazines, Chemical reactions, Amines, Alcohols, Phenols, Synthesis.

Menyailo, A. F., Klimenko, M. Ya., and others.
SÉPARATION DE L'ISOBUTYLÈNE DES MÉLANGES BUTANE-BUTYLÈNES (Extraction of Isobutylene from Butane-Butylene Mixtures). 4p. 1 ref. FR-2322.
Order from OTS, ETC or CNRS $0.80 62-26444

Trans. in French of Vsesoyuznoe Khimicheskoe Obshchestvo. Zhurnal (USSR) 1961, v. 6, no. 4, p. 470-471.

DESCRIPTORS: *Butanes, *Butenes, Mixtures, Separation, Hydrates.

Mignonac, Georges.
PROCESS FOR CATALYTIC REDUCTION APPLIED TO THE PREPARATION OF PRIMARY AMINES. [1963] 3p.
Order from OTS or SLA $1.10 63-16009

Trans. of French patent 647,090 [gr. 14, cl. 1, appl. 23 May 27, granted 24 July 28, pub. 20 Nov 28] U. S. Serial no. 402,558.
Another trans. is available from LC or SLA mi$1.80, ph$1.80 as 60-16153 [1960] 4p.

DESCRIPTORS: *Amines, *Nitriles, *Oximes, Synthesis, Reduction (Chemistry), Catalysis, Hydrogenation.

Mikhailov, N. V., Maiboroda, V. I., and Nikoleva, S. S.
SOME LAWS GOVERNING INTER-PHASE POLYCONDENSATION OF THE CHLORIDES OF DICARBOXYLIC ACIDS AND DIAMINES DURING FIBRE SPINNING. 11 July 62, 5p. 5 refs. [Trans] T. 1417; [DSIR] NLL M. 10008.
Order from OTS or SLA $1.10 63-15214

Trans. of mono. [Materialy Mezhdunarodnogo Simpoziuma po Makromolekulyarnoi Khimii] (Proceedings of the International Symposium on Macromolecular Chemistry, Moscow, 14-18 June 60) v. 1, p. 237-244.

DESCRIPTORS: *Condensation reactions, *Chlorides, *Carboxylic acids, *Hydrazines, *Fibers, Surface properties, *Polymers.

Studies were made of the following monomer systems:

(a) sebacoyl chloride and HMD; (b) adipoyl chloride and HMD; and (c) terephthaloyl chloride and HMD. Results given, however, relate to the monomer system sebacoyl chloride and HMD. It was found that the formation of polymer on the boundary between two moving layers of monomer solutions leads to greater yields than polymer formation on a static boundary and the polymers formed have higher specific viscosity. A change in the monomer concentrations and in the magnitude of the spinneret holes exerts a pronounced influence on the molecular weight and in particular on the yield of the polymer. The character of the solvent employed for the monomers and different additions to it bring about a sharp change in the macroscopic structure of the polymer. The purity of the starting materials exerts a great influence on fibre formation and on the properties of the polymer formed.

Nazarov, I. N. [Kravchenko, N. A., and Klabunovskii, E. I.].
STUDY OF THE POSSIBILITIES OF THE SYNTHESIS OF ISOPRENE FROM ACETYLENE. Pt. 1 on the Catalytic Synthesis of Isoprene from Hydrocarbon Gases. 21 June 60, 9p. (tables omitted) 8 refs.
Order from OTS or SLA $1.10 63-14089

Trans. of #Akad[emiya] Nauk SSSR. Otdel[enie] Khim[icheskikh] Nauk. Izvestiya, 1959 [no. 12] p. 2171-2176.

DESCRIPTORS: *Isoprene, *Acetylenes, *Propenes, Hydrocarbons, Gases, Catalysis, Benzenes, Synthesis (Chemistry).

Noguchi, Kenichi and Nakata, Shigeki.
METHOD OF METHANOL SYNTHESIS. July 63, 6p. 1 ref.
Order from SA $16.00 SA Code-P-162

Trans. of published Japanese patent 4854/1962, cl. 16-B-411 (13-F-12) appl. no. 37496/1958 filed 27 Dec 58, pub. 16 June 62, by Akita Sekiyu Kagaku Co., Ltd.

DESCRIPTORS: *Methanols, Synthesis (Chemistry), Gases, Hydrogen, Carbon dioxide, Carbon compounds, Monoxides, Catalysts, *Chromium catalysts, *Zinc

Nowakowska, M. and Dahlig, W.
INVESTIGATION OF THE POSSIBILITY OF COPOLYMERIZATION OF ETHYLENE WITH ACRYLONITRILE ON ORGANOMETALLIC COMPLEXES. [1963] 9p.
Order from ATS $12.50 ATS-43Q68P

Trans. of Polimery [Tworzywa Wielkoczasteczkowe] (Poland) 1962, v. 7, no. 4, p. 125-128.

DESCRIPTORS: *Ethylenes, *Copolymerization. *Acrylonitriles, *Metalorganic compounds.

Oda, Ryohei and Yamamoto, Keiji.
FORMYLATION OF AROMATIC COMPOUNDS BY THE 1 : 2 ADDUCT OF DIMETHYL-FORMAMIDE WITH CYANURIC CHLORIDE. [1963] 8p. 10 refs.
Order from SLA $1.10 63-16381

Trans. of [Nihon] Kagaku Zasshi (Japan) 1962, v. 83, no. 12, p. 1292-1294.

DESCRIPTORS: *Formamides, Methyl radicals, *Cyanogen chlorides, *Benzene derivatives, Amines, *Benzaldehydes, *Pyrolles, *Aldehydes, Naphthyl radicals, *Indoles, *Thiophenes, *Anilines, Formyl radicals.

As one of the numerous adducts formed by dimethylformamide, Gold (Angew. Chem. 72: 956, 1960) has obtained its 1 : 2 adduct with cyanuric chloride. It was discovered that this adduct was effective when used for Vilsmeier's reaction of formylation of various aromatic compounds, as is the adduct with phosphorus oxychloride. However, applicability of formylation by this adduct is rather restricted compared to the accepted reagents of the Vilsmeier reaction. (Author)

Ogawa, T. and Akashi, T.
OPTICAL SEPARATION OF RACEMIC GLUTAMIC ACID. [1963] 2p.
Order from OTS or SLA $1.10 63-16097

Trans. of Japanese [published] patent specification 2972/56, filed 15 Oct 53, pub. 20 Apr 56, assignee: Ajinomoto Ltd.

DESCRIPTORS: *Glutamic acid, Racemization, Crystals, *Stereochemistry.

Ogawa, T. and Akashi, T.
RESOLUTION OF RACEMIC GLUTAMIC ACID. [1963] 3p. (claims omitted).
Order from OTS or SLA $1.10 63-16290

Trans. of published Japanese patent 422/56, filed 15 Oct 53, pub. 24 Jan 56, by Ajinomoto Ltd.

DESCRIPTORS: *Glutamic acid, Racemization, Resolution, *Stereochemistry.

Oparin, A. E., Evreinova, T. N. and others.
COACERVATES AND FERMENTS: ALBUMIN-CARBOHYDRATE COACERVATES AND ALPHA-AMYLASES. 14 Mar 63 [7]p. 8 refs. FTD-TT-63-191. AD-402 458
Order from OTS or SLA $1.10 63-19330

Unedited rough draft trans. of Akademiya Nauk SSSR. Doklady, 1955, v. 104, no. 4, p. 581-583.

DESCRIPTORS: *Colloids, Fermentation, *Albumins, Carbohydrates, *Glycoside hydrolases.

Alpha-amylase was included within albumin-carbohydrate coacervate droplets and the action of the enzyme on the system was studied.

..tsuka, Eiji, Yoshimura, Shinji, and Inoue, Shigeru.
A PROCESS FOR THE PRODUCTION OF MELAMINE FROM AMMONIA, CARBON DIOXIDE AND UREA.
July 63, 6p. (fig. omitted). 1 ref.
Order from SA $16.00 SA Code-P-138

Trans. of published Japanese patent 11836/1962, cl. 16-E-47, appl. no. 41027/1959 filed 29 Dec 59, pub. 23 Aug 62, by Toyo Koatsu Industries, Inc.

DESCRIPTORS: *Melamine, Production, Synthesis (Chemistry), *Ammonia, *Carbon dioxide, *Urea, Ammonium compounds, Carbamates, Heat of formation.

Pace, E.
REACTIONS OF ACID CHLORIDE OF CARBONIC ACID ON DOUBLE BONDS. [1963] 12p.
Order from SLA $1.60 63-14197

Trans. of Gazz[etta] Chim[ica] Ital[iana] 1929, v. 59, p. 578-590.

DESCRIPTORS: *Carbonic acids, Carbonyl radicals, *Oxychlorides, *Phosgene, Chemical reactions, Chemical bonds, Fatty acids, Acetones, Terpenes, Catalysts, Aluminum compounds, Chlorides.

Petri.
THE PHOTOCHLORINATION OF METHANE AND METHYL CHLORIDE IN THE GASEOUS PHASE. [1963] [11]p. 3 refs.
Order from SLA $1.60 63-16787

Trans. from mono. of Central Laboratory of I. G., 1 July 43, T.O.M. Reel 53, Bag 3413, part of Item 4.

DESCRIPTORS: *Methanes, Methyl radicals, Chlorides, Gases, *Photochemical reactions, Chlorides.

Petrov, A. A. and Sopov, N. P.
PREPARATION AND TRANSFORMATIONS OF VINYL-CYCLOHEXADIENIC HYDROCARBONS. 11 May 62, 4p. (figs. tables omitted) 4 refs.
Order from OTS or SLA $1.10 63-14091

Trans. of Akademiya Nauk SSSR. Doklady [1951] v. 79, p. 811-813.

DESCRIPTORS: *Hydrocarbons, *Alcohols, Ketones, Synthesis (Chemistry), Physical properties, Vinyl radicals, Methyl radicals, Isomer, Chemical reactions, Bromination, Preparation.

Petrov, A. D. and Kaplan, E. P.
SYNTHESIS AND PROPERTIES OF ISOPARAFFIN HYDROCARBONS OF THE COMPOSITION C_{12}-C_{22}. COMMUNICATION 2. [1963] 9p. 13 refs.
Order from OTS or SLA $1.10 63-16801

Trans. of Zhurnal Oshchei Khimii (USSR) 1942, v. 12 [no. 1/2] p. 99-103.
An abstract trans. is available from OTS or SLA $1.60 as 61-20323 [1961] 18p.

DESCRIPTORS: *Alkanes, *Alkenes, *Ethyl radicals, *Methyl radicals, *Butyl radicals, Hydrocarbons, Physical properties, Chemical properties, Bromides, Synthesis (Chemistry).

The following hydrocarbons were synthesized for the first time: 4,5-diethyloctane, 2,7-dimethyl-4,5-diethyloctane, 7,8-diethyltetradecane, 5,6-dibutyldecane, etc. A description is given of the physicochemical constants and technically important parameters (viscosity, flash point, cetene number, etc.) of a number of isoparaffin hydrocarbons of composition C_{12}-C_{22}. (Author)

Petrov, K. A., Smirnov, V. V. and others.
METHOD FOR PREPARING ALKYL- OR ARYLDIHALOPHOSPHINES AND DIALKYL- OR DIARYLHALOPHOSPHINES. [20 Mar 63] 2p.
Order from OTS or SLA $1.10 63-16412

Trans. of U.S.S.R. patent 130,512, 1960.

DESCRIPTORS: *Phosphorus compounds (Organic), *Phosphines, Halides, Chlorides, Bromides, Tolyl radicals, Phenyl radicals, Benzyl radicals, Octanes, Synthesis (Chemistry), Phosphorus.

The patent concerns a method for the preparation of alkyl- or aryldihalophosphines and dialkyl- or diarylhalophosphines by the reaction of alkyl or aryl halides with phosphorus, characterized in that, in order to make it possible to carry out the process in the absence of a catalyst, white phosphorus is used. (Author)

Prandtl, W. and Hess, L.
THE VANADIC ACID ESTERS AND SOME OTHER ORGANOVANADIUM COMPOUNDS: [DISCUSSION]. [1963] 3p.
Order from SLA $1.10 63-14291

Partial trans. (p. 128-129) of [Zeitschrift für Anorganische und Allgemeine Chemie] (Germany) 1913, v. 82, p. 103-129.

DESCRIPTORS: *Metalorganic compounds, *Vanadic acid, Esters, Ethyl radicals, Propyl radicals, Butyl radicals, Pentyl radicals, Chlorides, *Vanadates, Synthesis (Chemistry).

Pinkernelle and Kroning.
THE CATALYTIC OXIDATION WITH AIR IN LIQUID PHASE. I. THE OXIDATION OF ETHYL BENZENE TO ACETOPHENONE. [1963] [18]p. (figs. omitted) 17 refs.
Order from OTS or SLA $1.60 63-16337

Trans. from mono. (report) of I. G. Farbenindustrie A.G., Verdingen Works, 30 Apr 41 (PB-563)

DESCRIPTORS: *Ethyl radicals, *Benzenes, *Acetophenones, Oxidation, Catalysis, Air, Liquids.

Ringel, J.
PROCESS FOR THE PRODUCTION OF Ɛ-CAPROLACTAM CONTINUOUSLY WITHOUT PRESSURE IN "VK" TUBES. [1963].
Order from TTIS $5.40 TTIS-NS-84

Trans. of East German patent 24,305, appl. 24 Dec 58, pub. 26 Nov 62.

DESCRIPTORS: Production, *Lactams, Polymers.

Ringel, J.
SUPERHEATED STEAM FOR LACTAM STRIPPING IN THE POLYMERISATION OF Ɛ-CAPROLACTAM. [1963].
Order from TTIS $3.60 TTIS NS-86

Trans. of East German patent 24,302, appl. 24 Dec 58, pub. 26 Nov 62.

DESCRIPTORS: Steam, *Lactams, *Polymerization, Polymers.

Romanov, A. and Lazar, M.
PREPARATION AND IDENTIFICATION OF "ATACTIC POLYPROPYLENE-POLYSTYRENE" GRAFT COPOLYMER. [1963] 6p.
Order from ATS $8.00 ATS-06Q69R

Trans. of Vysokomolekul[yarnye] Soedin[eniya] (USSR) 1962, v. 4, no. 12, p. 1867-1871.

DESCRIPTORS: Polymers, *Copolymerization, *Styrene plastics, *Propenes, Graft polymers.

Sadikhzadi, S. L. and Avrushevich, I. V.
SYNTHESIS OF TRIALKYLBUTADIENESILANES.
11 May 62, 4p. (figs. tables omitted) 6 refs.
Order from OTS or SLA $1.10 63-14090

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1957, v. 112 [no. 4] p. 662-665.

DESCRIPTORS: *Synthesis (Chemistry), *Alkyl radicals, *Butadienes, *Silanes, Distillation, Dehydrogenation, Dehydration, Copper compounds, Silicon compounds, Chloroprenes, Grignard reagents, Alcohols, Acroleins, Propenes, Aldehydes.

An attempt to synthesize 2-trialkyl silyl butadienes by reacting with the melted substance copper-silicon chloroprene under so-called direct synthesis conditions, did not succeed because before entering into the direct synthesis reaction chloroprene underwent cyclodimerization with the formation of two compounds which proved incapable of entering into direct synthesis. By reacting Grignard reagents trialkyl alpha chloromethyl silanes with acrylic and crotonic aldehydes, high yields secondary alcohols were obtained. These alcohols with hydroxyl in beta position in relation to silicon did not undergo beta decomposition even in distilling at atmospheric pressure. The dehydration of one group of the alcohols provided a new method for the synthesis of 1-trialkyl allyl butadiene monomers and their dimers. $KHSO_4$ proved to be an ideal dehydrogenation agent.

Sakagushi, Yasuoshi; Nishino, Jun, and Nitta, Takayoshi.
THE EFFECT OF ADDED SOLVENTS ON DEACETYLATION OF POLYVINYL ACETATE IN METHANOL. [1963] 10p. 9 refs.
Order from SLA $1.10 63-16418

Trans. of Kobunshi Kagaku (Japan) 1963, v. 20, no. 213, p. 86-90.

DESCRIPTORS: *Vinyl radicals, *Acetyl radicals, *Acetates, Solvent action, Additives, Methanols, Catalysts, Reaction kinetics.

Deacetylation of polyvinyl acetate was conducted in methanol using several types of acids or alkalis as catalyst, and the effect of the added solvents on the reaction velocity was studied. When a small amount of water was added to the reaction solution, the deacetylation velocity remained more or less unchanged when alkali catalyst was used, but clearly dropped when acid catalyst was used. In the case of acid catalyst, when water was added both the initial velocity of deacetylation and the autocatalytic effect decreased, and addition of acetic acid and dimethylformamide too also clearly lowered the reaction velocity. These results were considered, and it was concluded that decrease of velocity was due mainly to change of the acidity function of the reaction medium by the addition of polar solvents. (Author)

Sander, L.
PREPARATION OF ETHYL SULFURIC ACID AND DIETHYL SULFATE FROM ETHYLENE AND SULFURIC ACID AND THE SPLITTING OF ETHYL SULFURIC ACID AND DIETHYL SULFATE INTO ETHYLENE AND SULFURIC ACID. 12 July 48, 6p.
Order from OTS or SLA $1.10 63-16031

Trans. from mono. (report) of I. G. Farbenindustrie A.G., Frankfurt a.M., n.d. (PB-70248).

DESCRIPTORS: *Ethyl radicals, *Sulfuric acid, *Sulfates, *Ethylenes, Organic acids, Catalysts, Preparation, Chemical reactions.

Sauer, H. and others.
PROCESS FOR THE PRODUCTION OF UNIFORM FLOW CONDITIONS IN TUBES FOR THE SIMPLIFIED CONTINUOUS POLYMERISATION OF Ɛ-AMINOCAPROLACTAM. [1963].
Order from TTIS $3.60 TTIS NS-85

Trans. of East German patent 24,279, appl. 17 Aug 59, pub. 26 Nov 62.

DESCRIPTORS: Production, *Polymerization, *Amines, *Lactams, Polymers, Fluid flow.

Schulz, Rolf C., Kovacs, Jeno, and Werner, Kern.
SOLUTION EXPERIMENTS WITH REDOX POLYMERS OF ACROLEIN. [1963] 4p. 8 refs.
Order from SLA $1.10 63-16598

Trans. of Makromolekulare Chemie (Switzerland) 1962, v. 52, p. 236-238.
Another trans. is available from SLA $1.10 as 62-16963 [1962] 3p.

DESCRIPTORS: *Acroleins, Acetal plastics, *Polymers, Polymer solutions, Polymerization, Oxidation-reduction reactions.

Shimokawa, Yoshiharu.
METHOD OF MANUFACTURING ETHYLENE AND ACETYLENE BY THE PYROLYSIS OF HYDROCARBONS. July 63, 7p. (figs. omitted).
Order from SA $19.00 SA Code-P-135

Trans. of published Japanese patent 14063/1962, cl. 16-B-12 (16-B-120.11) appl. no. 18809/1956 filed 19 July 56, pub. 15 Sep 62.

DESCRIPTORS: *Ethylenes, *Acetylenes, Manufacturing methods, Gases, Hydrocarbons, Pyrolysis, Com-Combustion

Shtetter, I. I.
METHOD OF PREPARATION OF SILICON-ORGANIC COMPOUNDS CONTAINING CHLORINE. Aug 63, 2p.
Order from ES $2.00

Trans. of Russian patent 44,934 [cl. 120, 26] pub. 30 Nov 35.
Another trans. is available from LC or SLA mi$1.80, ph$1.80 as 60-14816, 6 Nov 46, 2p.

DESCRIPTORS: *Silicon compounds, Organic compounds, *Chlorine, Synthesis.

Sogawa, Toru, Shiga, Kazuyuki, and Kurazume, Senji.
METHOD OF MANUFACTURING ACETYLENE AND ETHYLENE BY PYROLYZING HYDROCARBONS. July 63, 6p. (fig. omitted) 1 ref.
Order from SA $16.00 SA Code-P-143

Trans. of published Japanese patent 11805/1962, cl. 16-B-12 (16-B-120.11) appl. no. 29447/1958 filed 14 Oct 58, pub. 23 Aug 62, by Chiyoda Kako Kensetsu Co., Ltd.

DESCRIPTORS: *Acetylenes, *Ethylenes, Manufacturing methods, Hydrocarbons, *Propanes, Pyrolysis

Spector, Marshall L. and Heinemann, Heins.
REMOVAL OF ACETYLENE AND METHYLACETYLENE FROM OLEFINES WITH THE AID OF CUPROUS/CUPRIC-SALT SOLUTIONS. [1963] 8p. [figs. omitted] 4 refs.
Order from SLA $1.10 63-16974

Trans. of Erdöl und Kohle-Erdgas-Petrochemie (West Germany) 1961, v. 14 [no. 11] p. 915-917.

DESCRIPTORS: *Alkenes, *Acetylenes, *Propynes, Separation, Catalysts, *Copper catalysts, Copper compounds, Chlorides, Hydrochloric acid.

A new process was developed for the removal of acetylene and/or mono-substituted acetylenes from olefine streams which on continuous operation diminishes the contents of these components to less than 5 ppm. The acetylene containing gas is passed through an aqueous cuprous-cupric chloride solution whereby acetylene is condensed to high boiling components which can be readily separated. (Author)

Spengler, G. and Hauf, G.
SEPARATION OF MIXTURES OF HYDROCARBONS BY ADSORPTIVE AND PREPARATIVE METHODS AND THEIR APPLICATION TO WAXES, IX, PT. I. [1963] 13p. 7 refs.
Order from SLA $1.60 63-16480

Trans. of Fette Seifen Anstrichmittel (West Germany) 1957, v. 59, no. 7, p. 509-514.
Another trans. is available from SLA as 58-522.

DESCRIPTORS: *Waxes, *Hydrocarbons, Separation, Adsorption, Polymers, *Beeswax.

A method for the separation of higher molecular hydrocarbons by means of test compounds was worked out and applied to the investigation of various wax products (candolilla wax, beeswax, paraffin slack wax and paraffin from lignite). (Author) (See also 59-17067)

Suzuki, Shigenari and Uno, Kanji.
METHOD OF AMINATION OF α-CHLOROGLUTARIC ACID OR ITS ESTERS. July 63, 3p. 4 refs.
Order from SA $16.00 SA Code-P-163

Trans. of published Japanese patent 17060/1961, cl. 16-B-65, appl. no. 4783/1958 filed 25 Feb 58, pub. 21 Sep 61, by Toa Gosei Kagaku Kogyo Co., Ltd.

DESCRIPTORS: *Glutamic acid, Synthesis (Chemistry), *Glutaric acids, Chlorides, Esters, Amines, *Ammonia, Sodium compounds, Halides, Hydroxides

Tsukervanik, I. P., Kim, Kh., and Kurbatova, A. S.
ACYLATION OF AROMATIC COMPOUNDS. PT. 6. ACETYLATION AND BENZOYLATION OF 2-METHYLNAPHTHALENE AND ACENAPHTHENE IN THE PRESENCE OF IRON OR FERRIC CHLORIDE. [1963] 5p.
Order from ATS $7.50 ATS-68Q69R

Trans. of # Zh[urnal] Obshch[ei] Khim[ii] (USSR) 1963, v. 33, no. 1, p. 234-237.

DESCRIPTORS: *Acetylation, *Benzoyl radicals, *Methyl radicals, *Naphthenes, Iron compounds, Chlorides, Acylation.

Ulzer, F.
PROCESS FOR ENNOBLEMENT OF TRIGLYCERIDES AND HYDROCARBONS. [1963] 2p.
Order from OTS or SLA $1.10 63-14337

Trans. of Austrian patent 88,667 [appl. 15 July 14, granted 15 Nov 21, pub.] 10 June 22.
Another trans. is available from OTS or SLA $1.10 as 60-16456 [1961] 2p.

DESCRIPTORS: *Glycerols, *Hydrocarbons, Ash, Fatty acids, Chemical analysis, Oils, Vegetable oils, Additives, Esterification.

Veselovskii, P. F. and Vorob'eva, E. P.
THE DIELECTRIC PROPERTIES OF SPATIAL COPOLYMERS OF STYRENE. July 63, 6p. 12 refs.
Order from ICE in v. 3, no. 3, $15.00/year

Trans. of Plasticheskie Massy (USSR) 1963, no. 2, p. 6-11.

DESCRIPTORS: Chemical engineering, *Dielectric properties, *Copolymerization, *Styrene plastics, Organic compounds.

Vollmann.
SCIENTIFIC ZETKO EXCHANGE STUDIES ON HIGHLY CHLORINATED AROMATICS. IV. FORMATION OF OCTACHLORODIPHENYLENE DIOXIDE FROM PENTACHLOROPHENOL AND A METHOD FOR SPLITTING DIPHENYLENE DIOXIDES TO FORM 2,2'-DIHYDROXYDIPHENYLETHERS. [1963] [5]p.
Order from OTS or SLA $1.10 63-16051

Trans. of mono. (report) of I. G. Farbenindustrie A.G., Ürdingen Works, Apr 43 (PB-591).

DESCRIPTORS: *Chlorides, Phenyl radicals, Dioxides, *Phenyl ethers, Hydroxides, *Phenols, Synthesis (Chemistry), Drugs, Dyes, Production.

Witt, Otto N.
1.3 DICHLOROBENZOL AND ITS DEVIATIVES, REPT. II. 14 Dec 59 4p. (figs. [refs.] omitted).
Order from SLA $1.10 63-14083

Trans. of [Chemische] Berichte (Germany) 1875, v. 8, p. 143-147.

DESCRIPTORS: *Benzene derivatives, Chlorides, Nitro radicals, *Anilines, Phenyl radicals, Amines, Synthesis (Chemistry).

Yang, Lin, Derevitskaya, V. A. and Rogovin, Z. A.
DÉVELOPPEMENT DES PROCÉDÉS DE SYNTHÈSE DES ESTERS DE CELLULOSE AVEC LES ACIDES AMINES N-SUBSTITUÉS (Synthesis of Cellulose Esters with N-Substituted Amino Acids). 5p. 6 refs.
Order from OTS, ETC or CNRS $0.80 62-26490

Trans. in French of Vysokomolekulyarnye Soedineniya (USSR) 1959, v. 1, no. 1, p. 157-161.

DESCRIPTORS: *Cellulose esters, *Amino acids, Synthesis (Chemistry).

Yano, Masayuki, Ueno, Takashi and Naito, Kaoru.
AN APPARATUS FOR THE PRODUCTION OF ACETYLENE AND ETHYLENE BY FLAME DECOMPOSITION OF LIQUID HYDROCARBONS. July 63, 9p. (figs. omitted.
Order from SA $19.00 SA Code-P-136

Trans. of published Japanese patent 13959/1962, cl. 16-B-12 (16-B-120.11) appl. no. 37391/1959 filed 2 Dec 59, pub. 14 Sep 62, by Kurashiki Rayon Co., Ltd

DESCRIPTORS: *Ethylenes, *Acetylenes, Production, Liquids, Hydrocarbons, Pyrolysis, Decomposition, Flames, Injectors, *Fuel nozzles, Design.

Yuki, H[iraaki].
ON TWO OR THREE PROPERTIES OF THE AQUEOUS SOLUTION CONSISTING OF L-GLUTAMIC ACID, L-LYSINE AND L-LEUCINE. Rept. no. 3 of [Synthetic Bipolar Polypeptide]. [1963] 2p. (figs. [formulae] tables omitted) 11 refs.
Order from SLA $1.10 63-16208

Partial trans. (p. 51) of Nihon Kagaku Zasshi (Japan) 1956, v. 77, no. 1, p. 51-54.

DESCRIPTORS: *Glutamic acid, *Lysines, *Leucine, *Peptides, Polymers, Viscosity, Solutions, *Amino acids.

(See also 63-16207)

Yuki, H[iraaki].
SYNTHESIS OF POLYPEPTIDE CONSISTING OF L-GLUTAMIC ACID, L-LYSINE AND L-LUECINE. Rept. no. 2 of [Synthetic Bipolar Polypeptide]. [1963] 9p. (figs. tables omitted) 5 refs.
Order from SLA $1.10 63-16207

Trans. of Nihon Kagaku Zasshi (Japan) 1956, v. 77, no. 1, p. 48-51.

DESCRIPTORS: *Peptides, *Glutamic acid, *Lycines, *Leucine, Synthesis, Polymerization, Copolymerization, *Amino acids.

(See also 63-16206)

Zaputryaev, B. A., Velitskaya, O. Ya., and others.
PERFECTIONNEMENT DE LA SYNTHÈSE DE LA METHYLBENZYLCETONE (Perfecting the Synthesis of Methylbenzylketone). 12p. 3 refs. FR-611.
Order from OTS, ETC or CNRS $0.80 62-26522

Trans. in French of unidentified Russian language article, n.d.

DESCRIPTORS: Methyl radicals, Benzyl radicals, *Ketones, Synthesis, *Cyanuric acid.

Zelinskii, N. D.
THE MOST RATIONAL CONDITIONS FOR OBTAINING TOLUOL AND BENZOLE (BENZENE) FROM OIL AND ITS DERIVATIVES. [1962] 2p.
Order from OTS or SLA $1.10 63-10401

Trans. of [Zhurnal Obshchei Khimii] (USSR) 1915, v. 47, p. 1807-1808.

DESCRIPTORS: *Toluene, *Benzenes, Monocyclic compounds, Hydrocarbons, Naphtha, Pyrolysis, Decomposition, Petroleum.

Physical Chemistry

PROCESS FOR INCORPORATING WATER IN OIL. [1963] 2p.
Order from OTS or SLA $1.10 63-16016

Trans. of French patent 722,752, 25 Mar 32, by Twitchell Proc. Co.

DESCRIPTORS: *Oils, *Water, Mineral oils, Sulfonates, Salts, *Solvents, Liquids, Solutions.

REDUCTION AND ELECTRIC CONDUCTIVITY OF ZINC OXIDE. [1963] 13p. (figs. refs. omitted).
Order from SLA $1.60 63-16530

Trans. of Zeitschrift für Elektrochemie (West Germany) 1962, v. 66, no. 1, p. 29-35.

DESCRIPTORS: *Zinc compounds, *Oxides, *Reduction (Chemistry), Electrical conductance, Hydrogen, Electrochemistry.

SÉPARATION ET PURIFICATION DU GERMANIUM PAR L'EMPLOI DE RÉSINES ÉCHANGEUSES D'IONS (Separation and Purification of Germanium by Ion Exchanging Resins). 5p. FX-842.
Order from OTS, ETC or CNRS $0.80 62-26442

Trans. in French of [published] Japanese patent 8506-1958 by Kakibana, Aichi Ken and Ogata, Tokio, pub. 24 Sep 58.

DESCRIPTORS: *Germanium, Mixtures, Separation, Purification, *Ion exchange resins, Acids.

Avduevskii, V. S. and Obroskova, E. I.
LAMINAR BOUNDARY LAYER ON A POROUS PLATE WITH CHEMICAL REACTIONS AT THE SURFACE. 26 Mar 63 [21]p. 3 refs. FTD-TT-63-307. AD-402 455
Order from OTS or SLA $2.60 63-19334

Unedited rough draft trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Mekhanika i Mashinostroenie, 1962, no. 5, p. 3-12.

DESCRIPTORS: Porous materials, *Laminar boundary layer, Chemical reactions, Carbon, Hydrogen, *Combustion, Thermal diffusion, Heat transfer, Mass transfer, *Sweat cooling, Coolants, Gas diffusion.

A study was made of a laminar boundary layer on a porous plate in the presence of chemical reactions. Results are given of numerical calculations of boundary-layer equations for the case of burning of carbon and hydrogen at the surface with binary diffusion inside the boundary layer and approximating formulas are suggested.

Beck, F. and Gerischer, H.
ELECTROCHEMICAL VIEWPOINTS CONCERNING CATALYTIC HYDROGENATION AT PLATINUM CONTACTS IN BUFFERED SOLUTIONS. 25 Feb 63 [39]p. 33 refs.
Order from SLA $3.60 63-16404

Trans. of Z[eitschrift] für Elektrochem[ie] (West Germany) 1961, v. 65, p. 504-517.

DESCRIPTORS: Electrochemistry, *Cyclohexanes, *Styrenes, Allyl radicals, Butenyl radicals, *Alcohols, Methyl radicals, Vinyl radicals, *Carbinols, Ethyl radicals, *Acetates, *Acrylic acid esters, Ethers, *Acetones, Mesityl radicals, Oxides, Phenyl radicals, *Acetylenes, *Nitrobenzenes, *Hydrogenation, *Platinum electrodes, Catalysts, Polarization, Ions, Chlorides, Hydrogen ion concentration, Buffers, Reaction kinetics.

The hydrogenation rate of a number of unsaturated compounds with an olefinic C = C double bond was measured at Pt contacts in aqueous alcoholic buffer solutions containing electrolytes. The influence of the pH, concentration of the unsaturated compound, Cl^- concentration, and polarization of the catalyst by a current passed through on the hydrogenation rate and on the simultaneously measured catalyst reference voltage was studied. The most significant results were: (1) The hydrogenation rate decreases with increasing pH. This is interpreted as an effect of the strong electric field at the phase boundary on the assumedly polar transition state in the rate-determining step of the hydrogenation reaction. (2) The catalyst reference voltage in the current-less state is a measure of the mean H_{ad} atom activity at the catalyst surface, and thus an indirect measure of the hydrogenation rate. (3) Cl^- ions reduce the effective surface by adsorptive displacement. The relationship between the reaction mechanism of the hydrogenation reaction and the electrolytic hydrogen evolution or hydrogen oxidation are discussed in detail. (Author)

Behn, U.
ABOUT THE DENSITY OF CARBON DIOXIDE IN SOLID AND LIQUID CONDITION. [1963] 10p. 6 refs.
Order from SLA $1.10 63-16498

Trans. of Ann[alen] der Phys[ik] (Germany) 1900, ser. 4, v. 3, p. 733-743.

DESCRIPTORS: *Carbon dioxide, *Density, Solids, Liquids, Vapor pressure, Liquefied gases, Solidified gases.

Delimarskii, Yu. K. and Buderaskaya, G. G.
SOLUBILITY OF TITANIUM, ZIRCONIUM, AND HAFNIUM OXIDES IN MOLTEN ALKALI METAL FLUORIDES, tr. by C. B. Finch. [1962] [8]p. 9 refs.
Order from OTS or SLA $1.10 AEC-tr-5601

Trans. of Ukrainskii Khimicheskii Zhurnal (USSR) 1962, v. 28, no. 5, p. 565-570.

DESCRIPTORS: *Oxides, *Hafnium compounds, *Zirconium compounds, *Titanium compounds, Solubility, *Fluorides, *Alkali metal compounds, *Liquid metals.

Fahn, Rudolf.
PROCESS FOR THE MANUFACTURE OF MATERIALS CAPABLE OF GREAT SWELLING FROM CLAY MINERALS. [1963] 4p.
Order from OTS or SLA $1.10 63-16201

Trans. of German patent 1,081,436, S 60,432 IVa/12i, internat. cl. C 01 b, cl. 12i 38, appl. 29 Oct 58, issued 12 May 60, by Sud Chemistry Corp.

DESCRIPTORS: *Clay minerals, Deformation, Alkaline earth compounds, Magnesium compounds, Salts, Carbonates, Sodium compounds.

The invention concerns a process for the production of highly swelling materials of clay minerals, predominantly alkaline earth bentonites, through addition of magnesium salts, characterized in that the magnesium is added in the form of such compounds whose anions form with the originally present exchangeable alkaline earth and particularly calcium ions compounds, and that the activation is carried out in combination with alkali ions, in particular sodium ions. The bentonites are activated with magnesium salts in which at least a part of the exchangeable cations consists of alkali ions. (Author)

Franck, E. U.
OVERCRITICAL WATER AS ELECTROLYTICAL SOLVENT. [1963] 35p. (tables figs. omitted) 86 refs.
Order from SLA $3.60 63-16221

Trans. of Angewandte Chemie (West Germany) 1961, v. 73, no. 10, p. 309-322.

DESCRIPTORS: *Steam, *Electrolytes, *Solvents, Density, Viscosity, Dielectric properties, Solubility, Electrical conductance, Dissociation, Hydrolysis, Solvent action.

High-condensed steam at overcritical temperature can dissolve in considerable amounts, solids such as alkali salts, silicon dioxide and other oxides and dioxides. Volatile substances such as CO_2 and argon are miscible completely with water at above 500° C up to more than 2000 bars. Overcritical steam has electrolytical properties at densities of more than 0.2 to 0.3 g/cu.cm. The dielectric constant with values between 5 and 20 was high enough in order to make feasible the ion dissociation of dissolved substances. The mobilities of the ions attain the tenfold value of the normal values in conformity with the low viscosity of the overcritical medium. The ion product of pure water grows with rising temperature and density and is e.g. at 600° C and 2000 bars approximately 10^5-fold larger than at 0° C Hydrolysis reactions are strongly favored thereby. The significance of solutions in the overcritical water for natural formations of deposits and technical problems is indicated. The density, viscosit dielectricity constant and solubility of over-critical water are discussed quantitatively. Measurements of conductivity are described and dissociation constants of salts as well as of KOH, HCL, HF and NH_3 between 400 and 750° C are given. Methods for computation of the ion product and of hydrolysis equilibria are indicated. (Author)

Genie, G. V.
STUDY AND CONSTRUCTION OF AN APPARATUS FOR THE MEASUREMENT OF THE SUPERSATURATION OF BOILING SUGAR SOLUTIONS [Etude et Construction d'Un Appareil pour la Mesure de la Sursaturation des Solutions Sucrees en Ebullition]. 28 Feb 57, 26p. (figs. omitted) 7 refs.
Order from SLA $2.60 63-14858

Trans. of la Sucrerie Belge, 1956, v. 75 [no. 10] p. 418-437.

DESCRIPTORS: *Carbohydrates, Solutions, *Supersaturation, Boiling, Measurement, Temperature, Thermistors.

Hofman, Konrad.
THE HETEROGENEOUS STEAM AND CARBONIC ACID DISSOCIATION EQUILIBRIA OVER IRON AND ITS OXIDES (Die Hetrogenen Wasserdampf- und Kohlensaure-Dissoziations-Gleichgewichte über Eisen und Seinen Oxyden). [1963] [18]p. (foreign text included) 8 refs.
Order from SLA $1.60 63-16746

Trans. of Z[eitschrift für] Elektrochem[ie] (Germany) 1925, v. 31, no. 4, p. 172-176.

DESCRIPTORS: *Steam, *Carbonic acids, Iron, *Iron compounds, *Oxides, *Chemical equilibrium, Dissociation, Phase studies, Mathematical analysis.

Jellinek, K. and Tomoff, G.
EQUILIBRIA BETWEEN SODIUM AND POTASSIUM AND THEIR CHLORIDES IN THE LIQUID, MOLTEN STATE, AND THE PREPARATION OF LEAD ALLOYS OF ALKALINE EARTHS. [1963] 19p. (figs. tables refs. omitted).
Order from SLA $1.60 63-16176

Trans. of Zeitschrift für Physikalische Chemie [Leipzig] (Germany) 1924, v. 111, p. 234-250.

DESCRIPTORS: *Sodium, *Potassium, *Chlorides, Liquid metals, *Chemical equilibrium, Fused materials, *Lead alloys, *Alkaline earth metals, Alloys, Phase studies.

Joly, M.
INVESTIGATIONS INTO THE CONVERSION OF SOME COLLOIDAL SYSTEMS WITH THE HELP OF STREAMING BIREFRINGENCE. [1963] 10p. (figs. omitted) 44 refs.
Order from SLA $1.10 63-16475

Trans. of Kolloid Zeit[schrift] (West Germany) 1949, v. 115, no. 1/3, p. 183-189.

DESCRIPTORS: *Colloids, Gels, *Gelatins, Serum albumin, Agglutination, Molecular association, Heat treatment, Refraction.

It is shown to what extent the determination of the angle of extinction of average concentrated colloidal system, corresponding to the streaming birefringence, permits one to follow the evolution with great accuracy, with time and under the effects of different chemical or physical agents. A detailed study is made of the

mechanism of molecular agglutination which precedes the solidification of gelatines and this method of investigation is applied to the study of the interactions between the gelatines and other colloids. Similarly, the details of molecular aggregation which accompany the thermal denaturing of serum albumin are studied, and the variations which occur as a function of heating temperature, heating time, concentration and pH, are given. An interpretation of the mechanism of denaturing is proposed. (Author)

Kaganov, S. A., Levinter, M. Kh., and Medvedeva, M. I.
KINETICS OF THE COKING OF ASPHALTENES. [1963] 9p. 6 refs.
Order from OTS or SLA $1.10 63-18421

Trans. of Khim[iya] i Tekhn[ologiya] Topliv i Masel (USSR) 1962, v. 7 [no. 7] p. 38-43.
Other translations are available from ATS $10.00 as ATS-28P65R [1962] 8p. and from ICE in v. 3, no. 2, $15.00/year.

DESCRIPTORS: *Petroleum, Oils, *Bitumens, Degradation, Reaction kinetics, *Coke, Production, Asphalt.

Coking of natural asphaltenes at the temperature of 423 C and at a reaction time of 115 to 300 min. gave 59.5% coke and 40.5% of gas and distillate. The yield in distillate increases somewhat, while the yield in coke drops, with raised temperature of the process. Formation of carboids from asphaltenes through coking represents a parallel-successive process, in which evaporation occurs aside of chemical reactions. The process of carboids formation is determined by the reaction of primary decomposition with formation of high-molecular products. A quantitative confirmation of the successive, two-channelled mechanism of carboid formation was produced. (Author)

Karsten, O.
DIAGRAMS OF THE SOLUBILITY EQUILIBRIUMS OF THE QUINARY SYSTEM Na_2Cl_2, K_2Cl_2, $MgCl_2$, $MgSO_4$ AND H_2O, WITH SPECIAL CONSIDERATION OF METASTABLE CONDITIONS. [1963] [18]p 10 refs.
Order from SLA $1.60 63-16110

Trans. of Zeitschrift für Anorganische und Allgemeine Chemie (East Germany) 1950, v. 263, p. 292-304.

DESCRIPTORS: *Chlorides, *Sodium compounds, *Potassium compounds, *Magnesium compounds, *Sulfates, Solubility, Thermodynamics, Phase studies, Water, Chemical equilibrium.

In the further development of the diagrams of the solubility equilibriums of the system Na_2Cl_2, K_2Cl_2, $MgCl_2$, $MgSO_4$, H_2O according to Van't Hoff and D'Ans, new diagrams are presented from which the absolute values of the four salt contents can be read off on any desired point of the saturation areas. The diagrams comprise the metastable existence regions which are of particular interest in the processing of the crude potash salts. Computations of isothermic and polythermic solution and crystallization processes can be carried out quite easily on hand of these new diagrams even in metastable areas. (Author)

Kirillov, N. I.
THEORY OF EQUILIBRIUM CONCENTRATIONS UNDER CONDITIONS OF CONTINUOUS OVERFLOW OF SOLUTION. III. COUNTERCURRENT PROCESSES. [1963] [26]p. 3 refs.
Order from OTS or SLA $2.60 63-14848

Trans. of [Zhurnal Prikladnoi Khimii] (USSR) 1945, v. 18 [no. 7/8] p. 381-392.
Another trans. is available from LC or SLA mi$2.70, ph$4.80 as 60-18411 [1960] 21p.

DESCRIPTORS: *Solutions, *Chemical equilibrium, Fluid flow, Mathematical analysis.

A theoretical consideration of the changes in concentration of starting and ultimate components in a state of equilibrium in continuous countercurrent processes was carried out. The most detailed analysis was applied to the process when the starting component undergoes no chemical reaction in the reaction vessels. The resulting equations can be applied to calculations of continuous countercurrent processes. (Author)

Kölbel, H., Klamann, D., and Kurzendörfer, P.
CONSTITUTION AND PROPERTIES OF SURFACE-ACTIVE SUBSTANCES. III. THE EFFECT OF STRUCTURAL ELEMENTS ON THE PHYSICAL AND TECHNICAL PHENOMENA IN THEIR FIELD OF APPLICATION. [1962] 25p. 24 refs.
Order from SLA $2.60 63-10125

Trans. of Angew[andte] Chem[ie] (West Germany) 1961, v. 73, no. 9, p. 290-298.
Another trans. is available from ATS $23.40 as ATS-95N53G [1961] 16p.

DESCRIPTORS: *Surface active substances, Cleaning compounds, Molecular structure, Surface tension, Colloids.

The surface-active properties (surface film formation, wetting, foaming and washing properties), as well as the micelle formation of alkyl sulfates and alkane sulfonates and of benzene-mono and dialkyl sulfonates, were investigated. By varying the structure of surface-active compounds (type of the hydrophobic molecule part, presence of an intermediate linkage between a hydrophobic alkyl chain and a hydrophilic group, type and position of the hydrophilic group) relationships were found between the constitution and the properties of pure detergents. (Author)

Kovba, L. M. and Trunov, V. K.
ON THE RESEARCH ON BINARY OXIDES CONTAINING TUNGSTEN, TANTALUM OR NIOBIUM. [1963] 7p. 3 refs.
Order from OTS or SLA $1.10 63-16624

Trans. of [Akademiya Nauk SSSR. Doklady] 1962, v. 147, no. 3 [p. 622-624].
Another trans. is available from OTS or SLA $1.10 as 63-14456 [1963] 6p.

DESCRIPTORS: *Niobium, *Tantalum, *Tungsten, *Dioxides, Uranium, Oxygen compounds, Chemical reactions.

A study was made of reactions of ThO_2, CeO_2, and UO_2 with Ta_2O_5 and Nb_2O_5, as well as the reactions of Ta_2O_5 with WO_3. Also new data about the Uranium and Tungsten oxygen compounds were obtained.

Kranjc, K.
MODIFICATION CRISTALLINE DE L'HYDRATE D'ALUMINIUM, OBTENUE PAR L'OXYDATION DE L'ALUMINIUM, ACTIVÉE PAR DU MERCURE (The Crystal Modification of Aluminium Hydroxide Obtained by Oxidation of Aluminium Activated with Mercury). 8p. 4 refs. FX-801.
Order from OTS, ETC or CNRS $0.80 62-26939

Trans. in French of [Croatica Chemica Acta] (Yugoslavia) 1954, v. 26, p. 95-99.

DESCRIPTORS: *Aluminum compounds, *Hydroxides, Oxidation, *Mercury, Catalysts, *Radiographic analysis, Crystal structure.

Kubelka, Paul.
THE VAPOR PRESSURE ISOTHERMS AND THE SUBMICROSCOPICAL STRUCTURE OF ACTIVE CARBON (Die Dampfdruckisotherme und die Submikroskopische Struktur der Aktiven Kohle). [1963] [31]p. (foreign text included) 7 refs.
Order from SLA $3.60 63-16756

Trans. of Kolloid-Zeitschrift (Germany) 1931, v. 55, no. 2, p. 129-143.

DESCRIPTORS: *Activated carbon, Absorption, Microstructure, Gases, *Carbonic acids, Water vapor, Benzols, Ether, Chloroform, Nitro radicals, *Vapor pressure.

Lange, S. and Rens, G.
STANDARD DETERMINATION OF THE COEFFICIENT OF FILTERABILITY [La Determination Standard du Coefficient de Filtrabilite F_K]. [1963] 5p. (figs. omitted) 2 refs.
Order from SLA $1.10 63-14868

Trans. of [la] Sucr[erie] Belge, 1956, v. 76 [no. 3] p. 101-103.

DESCRIPTORS: *Colloids, *Filter papers, *Material separation, Determination.

Liszka, C.
ÉTUDES DE LABORATOIRE DES PHÉNOMÈNES DE CAPILLARITE À LA SURFACE DE CONTACT DU PÉTROLE BRUT ET DE L'EAU DANS UN MILIEU EFFECTIVEMENT POREUX (Laboratory Investigation in the Surface Contact Capillarity of Crude Oil and Water in Porous Medium). 9p. 5 refs. FX-790.
Order from OTS, ETC or CNRS $0.80 62-26434

Trans. in French of Nafta (Poland) 1961, v. 17, no. 6, p. 164-168.

DESCRIPTORS: *Petroleum, *Water, Porous materials, Capillaries, Experimental data.

Makishima, Shoji.
THEORETICAL CONSIDERATIONS REGARDING THE ELECTROCHEMICAL PROPERTIES OF LIQUID AMMONIA (Theoretische Überlegungen über die Elektrochemischen Eigenschaften des Flüssigen Ammoniaks). [1963] [81]p. (foreign text included) 23 refs.
Order from SLA $8.10 63-16827

Trans. of Tokyo U. Faculty of Engineering. Journal (Japan) 1938, v. 21, no. 3, p. 115-168.

DESCRIPTORS: *Electrochemistry, *Ammonia, Electrical properties, *Alkali metal compounds, *Alkaline earth compounds, Halides, Solubility, Heat of solution, Dissociation.

Maksimova, M. P., Vasserberg, V. E., and Balandin, A. A.
THE EFFECT OF THE DEGREE OF DEHYDRATION OF THE SURFACE OF Al_2O_3 ON ITS ADSORPTION PROPERTIES AND THE ELEMENTARY AREAS OF THE ADSORBED MOLECULES. [1963] 6p.
Order from ATS $7.50 ATS-51Q69R

Trans. of #Akad[emiya] Nauk SSSR. Otd[elenie] Khim[icheskikh] Nauk. Izv[estiya] 1963, no. 1, p. 17-21.

DESCRIPTORS: Molecules, *Adsorption, *Aluminum compounds, *Oxides, Surfaces, Dehydration.

Nassenstein, H.
TOTAL REFLECTION ON ELECTROCHEMICAL BOUNDARY LAYERS. [1963] 31p. 13 refs.
Order from SLA $3.60 63-16559

Trans. of Zeitschrift fur Naturforschung (West Germany) 1962, v. 17a, no. 1, p. 8-17.

DESCRIPTORS: *Refractive index, *Electrochemistry, *Boundary layer, Solutions, Membranes, Electric currents, Optical properties, Diffusion, Test methods, Tests.

The index of refraction can be varied by electrical means to such an extent in electrochemical boundary layers of suitable solutions that in a large sector total reflection of light can be produced on such a boundary layer. The optical effects of the boundary layer in the case of total reflection are discussed after the calcula- of the concentration gradient in the vicinity of a current-carrying membrane. A sharp boundary edge of total reflection should be formed for a suitable experimental procedure which is shifted towards smaller angles of incidence. Experiments which satisfactorily confirm the derived principles are described. The formation of the electrochemical boundary layer in time as a current-carrying membrane can be directly observed by the described method and conclusions of the physical and the electrochemical constants of this solution can be drawn. (Author)

Neiman, M. B. and Shushunov, V. A.
KINETIC METHOD OF PHYSICAL CHEMICAL ANALYSIS. IV. [THE TERNARY SYSTEM Na + Pb + K]. [1963] [16]p. 14 refs.
Order from OTS or SLA $1.60 63-16042

Trans. of [Zhurnal Fizicheskoi Khimii] (USSR) 1948, v. 22, no. 2, p. 161[-167].

DESCRIPTORS: *Phase studies, Chemical analysis, *Sodium alloys, *Lead alloys, *Potassium alloys, *Ethanes, Chlorides, Vapor pressure, Reaction kinetics, Ethyl radicals, Lead, Synthesis (Chemistry), *Intermetallic compounds, Sodium compounds, *Plumbides.

It was stated that the addition of potassium to the binary alloy NaPb, does not change the character of the kinetical curves, markedly shortening induction period of the reaction between vapor of ethyl chloride and the alloy. It was shown, that the increase of concentration of potassium in ternary alloy, lowers the critical temperature of the reaction of formation tetraethyllead. There was drawn a diagram "composition - induction period" for the ternary system Na + Pb + K. From the sections of this diagram it was stated that with the increase of the concentration of potassium in the alloy, minimum on the curves "composition-induction period" everywhere corresponds to the 50 at. % contents of lead in the alloy. This is the proof of the existence of the compound NaPb, in which atoms of sodium can be partly replaced by the atoms of potassium. (Author) (See also 63-16041)

Sandulescu, D.
THE PHYSICAL CHEMISTRY OF THE INTERNAL AND SURFACE STRUCTURE OF CATALYSTS. July July 63, 8p. 4 refs.
Order from ICE in v. 3, no. 3, $15.00/year

Trans. of Revista de Chimie (Rumania) 1963 [v. 14] no. 4, p. 217ff.

DESCRIPTORS: Chemical engineering, *Catalysts, Adsorption, Polymers, Spectrophotometers, Gas chromatography, Additives, Oxides, Thermodynamics, Diffusion, *Physical chemistry.

Schaefer, Harald and Breil, Günther.
THE TENDENCY FOR THE FORMATION OF GASEOUS TRICHLORIDES OF THE ELEMENTS CHROMIUM, MANGANESE, IRON, COBALT, NICKEL, INVESTIGATED WITH THE REACTION $MeCl_2$ gas + 1/2 Cl_2 + $MeCl_3$ gas. [1963] 11p. 20 refs.
Order from SLA $1.60 63-16851
Trans. of Zeitschrift für Anorganische und Allgemeine Chemie (East Germany) 1956, v. 283, p. 304-313.

DESCRIPTORS: *Chromium compounds, *Manganese compounds, *Iron compounds, *Cobalt compounds, *Nickel compounds, Gases, *Chlorides, Methanes, Phase studies, Chemical equilibrium, Decomposition, Enthalpy, Ionization potentials.

Entrainment measurements in the chlorine stream with the dichlorides $MnCl_2$, $CoCl_2$ and $NiCl_2$ as the solid phase gave a very considerable formation of gaseous trichloride with cobalt, but with manganese and with nickel a formation existing at the limit of the detectability. With chromium and iron the desired equilibrium $MeCl_2$ gas + 1/2 Cl_2 = $MeCl_3$ gas was obtained from data in the literature. For the reaction $MeCl_2$ gas + Cl = $MeCl_3$ gas there exists in the series chromium, manganese, iron, cobalt, nickel, an equally thought out approach to the reaction entropies with the ionization voltages $Me^{2+} = Me^{3+} + e^-$. The desired equilibrium $MeCl_2$ gas + 1/2 Cl_2 = $MeCl_3$ gas was obtained in the case of chromium and of iron by means of a combination of known equilibrium. The decomposition enthalpies of the chlorides in the series chromium, manganese, iron, cobalt, nickel, were summarized and the reaction enthalpies for $MeCl_2$ gas + Cl = $MeCl_3$ gas were compared with the ionization voltages of the cations $Me^{2+} = Me^{3+} + e^-$. (Author)

Shapovalova, L. P., Gorokhovatskii, Ya. B., and Rubanik, M. Ya.
OXIDATION OF UNSATURATED HYDROCARBONS ON A COPPER CATALYST. July 63, 5p. 16 refs.
Order from ICE in v. 3, no. 3, $15.00/year

Trans. of Ukr[ainskii] Khim[icheskii] Zh[urnal] (USSR) 1962, v. 28, no. 9, p. 1031-[1036].
Another trans. is available from ATS $11.50 as ATS-16Q68R [1963] 8p.

DESCRIPTORS: *Oxidation, *Hydrocarbons, *Copper, Catalysts, Chemical engineering.

Shelyubskii, V. I. and Gusarov, V. V.
HIGH TEMPERATURE SILIT FURNACE (Vysokotemperaturnaya Silitovaya Pech'). [1963] [7]p. (foreign text included) 4 refs.
Order from OTS or SLA $1.10 63-14064

Trans. of Pribory i Tekh[nika] Eksp[erimenta] (USSR) 1958, no. 1, p. 138-139.
Another trans. in French is available from LC or SLA mi$1.80, ph$1.80 as 59-19035, CEA-tr-R644, 18 Apr 59 [8]p.

DESCRIPTORS: *Electric furnaces, *Laboratory furnaces, High temperature research, Design, Glass, *Viscosimeters.

Described are the construction and the method of regulation of a silit furnace, which can be kept operating for a prolonged period of time at temperatures up till 1500° C; one can maintain a temperature gradient in the operative section of 1 - 2° C, and the accuracy of the automatic regulation is ± 1° C. The construction of the furnace makes it possible to operate with materials which give off vapors which would attack the silit heating parts. (Author)

Sicha, Miroslav.
ELECTROLYTIC AND CHLORINATION METHODS FOR THE DETERMINATION OF NONMETALLIC INCLUSIONS IN STEEL: ELECTROLYTIC DETERMINATION OF CARBIDES IN STEEL. [1963] 18p.
Order from SLA $1.60 63-16867

Trans. of Hutnicke Listy (Czechoslovakia) 1954, v. 9 [no. 1] p. 2-6.

DESCRIPTORS: *Steel, *Carbides, Chemical analysis, Electrolytes, Electrolysis, Volumetric analysis, Impurities, Test methods, Chlorides, Chlorine compounds, Sulfides, Vacuum apparatus.

Topics include: Apparatus for the electrolytic determination of nonmetallic inclusions and carbides in steel; apparatus for the determination of sulfides; vacuum apparatus for anodic chloride residue; development of serviceable apparatus and industrial method; and, submicroscopic isolation of inclusions and carbides from steel.

Sklyarenko, S. I. and Belov, S. F.
INFLUENCE OF THE MELT COMPOSITION ON EQUILIBRIUM CONCENTRATION OF $TiCl_2$-$TiCl_3$. [1963] [11]p. 12 refs.
Order from OTS or SLA $1.60 AEC-tr-5691

Trans. of #Zhurnal Neorganicheskoi Khimii (USSR) 1962, v. 7, no. 7, p. 1636-1639.

DESCRIPTORS: *Titanium compounds, *Chlorides, Melting, *Chemical equilibrium.

Stackelberg, N. von, Quatram, P., and Dressel, Jutta.
THE VOLATILITY OF BORIC ACIDS WITH STEAM, THE SYSTEM B_2O_3- WATER. [1963] [44]p. 22 refs.
Order from SLA $4.60 63-16257

Trans. of [Zeitschrift für Elektrochemie (Germany) 1937, v. 43, no. 1, p. 14-28].
Another trans. is available from SLA as 58-1776, 40p.

DESCRIPTORS: *Boric acids, *Steam, Water, Oxides, Boron compounds, Vapor pressure, Phase studies, Thermodynamics.

Sultanov, M. Yu. and Belen'kii, M. S.
INFLUENCE OF THE COMPOSITION ON THE PROPERTIES OF COPPER OXIDE-CHROMIUM OXIDE CATALYSTS IN THE REACTION OF THE COMPLETE OXIDATION OF n-HEPTANE. July 63, 4p. 5 refs.
Order from ICE in v. 3, no. 3, $15.00/year

Trans. of Izv[estiya] Vysshikh Uchebn[ykh] Zavedenii. Neft i Gaz (USSR) 1962, v. 5, no. 12, p. 59-[64].
Another trans. is available from ATS $8.50 as ATS-12Q69R [1963] 7p.

DESCRIPTORS: Chemical engineering, *Oxidation, *Catalysts, *Copper compounds, Oxides, *Chromium compounds, Temperature, *Heptanes, Hydrocarbons, Heat of activation.

Sviridov, V. V. and Makarevich, I. A.
SOME CHARACTERISTICS OF THE KINETICS OF THERMAL DECOMPOSITION OF SILVER OXALATE IN THE ATMOSPHERE OF VARIOUS GASES. [1963] 3p. (figs. refs. omitted).
Order from OTS or SLA $1.10 63-18022

Trans. of Akad[emiya] Navuk BSSR, Minsk. Doklady. 1959, v. 3 [no. 5] p. 208-210.

DESCRIPTORS: *Silver compounds, *Oxalates, Pyrolysis, Reaction kinetics, Hydrogen, Oxygen, Gases.

Tarasenkov, D. N., Grigorovich, A. N., and Bogoslovskaya, A. V.
ON METHODS OF MEASURING THE VAPOR PRESSURE OF METAL SALTS. [1963] [19]p. (figs. omitted) 12 refs.
Order from OTS or SLA $1.60 63-14305

Trans. of Zhurnal Obshchei Khimii (USSR) 1935, v. 5, p. 924-933.

DESCRIPTORS: *Vapor pressure, *Lead compounds, *Sulfides, *Chlorides, *Copper compounds, Metallic compounds, Salts, Measurement, Fluid flow, Statistical analysis, Boiling.

Weisser, O.
SULFIDE CATALYSTS, THEIR PROPERTIES AND USES. July 63, 37p. 996 refs.
Order from ICE in v. 3, no. 3, $15.00/year

Trans. of Chemicke Listy (Czechoslovakia) 1962 [v. 56] no. 10, p. 1222-[1280].

DESCRIPTORS: Chemical engineering, *Sulfides, *Catalysts, Hydrogenation, Hydrocarbons, Chemical properties.

Widell, Torsten.
FORMATION OF SO_3 IN STEAM BOILERS. [1963] [7]p. 6 refs.
Order from OTS or SLA $1.10 63-16400

Trans. of Teknisk Tidskrift (Sweden) 1952 [v. 82] 23 Dec, p. 1095-1096.
Another trans. is available from SLA as 58-711 and from OTS as PB-109 903.

DESCRIPTORS: *Boilers, Steam, *Corrosive gases, *Sulfur compounds, Oxides, Dioxides, Oxidation, Reaction kinetics, Chemical equilibrium.

Woringer, Benedikt.
ON THE VAPOR PRESSURE OF A SERIES OF BENZENE COMPOUNDS [Uber die Dampfspannungen einer Reihe von Benzalkörpern]. [1963] 4p. 3 refs.
Order from SLA $1.10 63-16026

Abstract trans. of Zeitschrift für Physikalische Chemie [Leipzig] (Germany) 1900, v. 34, p. 257-289.

DESCRIPTORS: *Benzenes, *Vapor pressure, Boiling, Statistical data.

Yatlov, V. S. and Polyakova, E. M.
EQUILIBRIUM IN THE SYSTEMS NH_4F-H_2O AND NH_4HF_2-H_2O. [1963] [9]p. 5 refs.
Order from OTS or SLA $1.10 63-16069

Trans. of [Zhurnal Obshchei Khimii] (USSR) 1945, v. 15, p. 724-728.

DESCRIPTORS: *Ammonium compounds, *Fluorides, *Water, Phase studies, Thermodynamics, Physical properties.

The equilibrium between the liquid and the solid phase in the systems NH_4F-H_2O and NH_4HF_2-H_2O was studied. It has been found that NH_4F forms at -16.8° a hydrate having the composition $NH_4F \cdot H_2O$. In the system NH_4HF_2-H_2O the existence of only two solid phases has been observed of ice and of the anhydrous salt. The solubility curve in this system continues up to the melting point of the anhydrous salt, which was found to be 126.1° C. The partial pressures of NH_3 and H_2O over solutions of NH_4F were determined in the case of three concentrations. The vapor pressures of the pure salts were determined within the interval of temperatures 80-180°. It was found that heating leads to the decomposition of both salts. (Author)

Zagvozdkin, K.
ON THE THEORY OF THERMAL REDUCTION OF PHOSPHORUS FROM CALCIUM PHOSPHATES ACCORDING TO WUEHLER. [1963] 23p. (figs. omitted). 12 refs.
Order from OTS or SLA $2.60 63-16231

Trans. of Zhurnal Prikladnoi Khimii (USSR) 1934, v. 7, no. 3, p. 455-468.

DESCRIPTORS: *Phosphorus, *Calcium compounds, *Phosphates, *Reduction (Chemistry), Dissociation, Reaction kinetics, Temperature, Manufacturing methods.

Zel'venskii, Ya. D., Titov, A. A., and Shalygin, V. A.
A STUDY OF THE INFLUENCE OF PRESSURE ON MASS TRANSFER IN A PACKED RECTIFICATION COLUMN BY MEANS OF RADIOISOTOPES. July 63, 8p. 28 refs.
Order from ICE in v. 3, no. 3, $15.00/year

Trans. of Khim[icheskaya] Prom[yshlennost'] (USSR) 1963, no. 2 [p. 116-122].

DESCRIPTORS: *Mass transfer, *Towers (Chemistry), *Radioactive isotopes, Pressure, Temperature, Chemical engineering.

Ziolkowski, Z. and Filip, S.
INTENSIFICATION OF ABSORPTION BY PULSATION OF THE VAPOR PHASE. July 63, 6p. 3 refs.
Order from ICE in v. 3, no. 3, $15.00/year

Trans. of Przemysl Chemiczny (Poland) 1963 [v. 19(42)] no. 2, p. 99-[102].

DESCRIPTORS: *Absorption (Physical), Towers (Chemistry), Mass transfer, Vapors, Carbon dioxide, Hydroxides, Chemical engineering.

EARTH SCIENCES

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 246 (EARTH SCIENCES SERIES). 19 July 63, 5p. JPRS: 20259.
Order from OTS $0.50 63-31334

Abstract trans. of Geodetski List (Yugoslavia) 1963, v. 17, no. 1/3, p. 3-70.

DESCRIPTORS: *Abstracts, *Geophysics, *Yugoslavia, *Geodesics, Leveling rods, Errors, Statistical analysis, Photo interpretation, Mapping, Surveying.

ABSTRACTS PERTAINING TO COMMUNIST CHINA IN SOVIET ABSTRACTS JOURNALS NO. 78 (GEOLOGY AND GEOGRAPHY SERIES). 3 July 63, 27p. JPRS: 20003.
Order from OTS $0.75 63-31193

Trans. of selected abstracts from Referativnyi Zhurnal. Geologiya (USSR) 1963, no. 1; Referativnyi Zhurnal. Geografiya (USSR) 1963, no. 3.

DESCRIPTORS: *Abstracts, *Geology, *Geography, *China, Paleontology, Mineralogy, Geochemistry, Geophysics, Engineering geology, Hydrology, Meteorology, Climatology.

DOKLADY OF THE ACADEMY OF SCIENCES OF THE USSR, EARTH SCIENCES SECTION, 1961, VOL. 138, NOS. 1-6, P. 485-[676]. Nov. 62, 1v.
Order from AGI $8.00, $45.00/year

Trans. of Akademiya Nauk SSSR. Doklady, 1961, v. 138, no. 1, p. 102-105, 177-206; no. 2, p. 348-354, 419-434; no. 3, p. 587-590, 631-676; no. 4, p. 890-930; no. 5, p. 1163-1186; no. 6, p. 1341-1344, 1405-1437.

DESCRIPTORS: *Geochemistry, *Geology, *Geophysics, *Hydrology, *Stratigraphy, *Mineralogy, *Paleoecology, *Permafrost, *Petrology, Paleontology.

METEOROLOGY AND HYDROLOGY, 1963, NO. 6: [SELECTED] TRANSLATIONS. 29 July 63, 49p. 30 refs. JPRS: 20398.
Order from OTS $1.50 63-31407

Trans. of Meteorologiya i Gidrologiya (USSR) 1963, no. 6, p. 18-30, 35-40, 47-50, 61-64.

DESCRIPTORS: *Meteorology, *Hydrology, Water, Temperature, Ice, Arctic regions, Oceanology, Test methods, Bibliographies, Scientific organizations, Automation.

Contents:
Calculation of the distribution of water temperature along a vertical line, by N. A. Belinskii and others
Influence of temperature anomalies on the ice cover of the Arctic, by L. I. Zubenok

Computation of baroclinic depth, by G. Ya. Shkudova
The organization and methods used in expeditionary hydrological work at the mouth of a river, by N. A. Rodionov
Literature on meteorology and hydrology for 1962: articles in journals and special collections of articles (hydrology)
E. K. Fedorov elected vice-president of the World Meteorological Organization
Activities at the main administration of the hydrometeorological service
Activities of the central systematic commission on hydrological forecasts
Automation in hydrology
Supplement to the regulations for hydrometeorological stations.

SOVIET-BLOC-PARTICIPATION IN THE IQSY: REVIEW ARTICLE. Rept. 1 on AID Work Assignment 35. 22 May 63 [51]p. AID Rept. P-63-76.
Order from OTS or SLA $5.60 63-23097

DESCRIPTORS: *Scientific research, *Scientific organizations, *Scientific personnel, Astrophysics, Geophysics, Test facilities, Research program administration, Reviews.

SOVIET HYDROLOGY: SELECTED PAPERS, 1962, NO. 3, P. 227-344. Apr 63, 1 v. 37 refs.
Order from AGU $7.50, $20.00/year

Trans. of G[osudarstvennyi] G[idrologicheskii] I[nstitut]. Trudy (USSR) 1962, v. 85, p. 3-16, 37-51; v. 94, p. 3-86, 115-128; [Meteorologiya i Gidrologiya] (USSR) 1962, no. 2, p. 42-45. Includes selected abstracts of related articles not translated.

DESCRIPTORS: *Hydrology, Dams, Contamination, Sewage, Sedimentation, Rivers, River currents, Erosion, Bridges, Piers, Red Sea.

Contents:
Study and estimate of the water balance of reservoirs, by V. A. Vikulina
A study of reservoirs in relation to their pollution with sewage, by T. N. Filatova
A sediment balance of river reaches and its use for the characteristics of channel process, by I. V. Popov
Application of morphological analysis to the evaluation of the general channel deformations of the river Ob, by I. V. Popov
Effect of average channel formations on the local scourings at bridge piers, by N. S. Znamenskaya
Hydrology of the Suez Canal, the Red Sea and the Gulf of Aden, by A. M. Muromtsev.

SOVIET SOIL SCIENCE, 1958, NOS. 1-12.
July 59-Aug 60, 12 nos.
Order from OTS or SLA

Trans. of Pochvovedenie (USSR) 1958, nos. 1-12.

DESCRIPTORS: *Soils.

no. 1, 116p. $9.60, 63-23472-(1)
no. 2, 104p. $9.10, 63-23472-(2)
no. 3, 130p. $10.10, 63-23472-(3)
no. 4, 127p. $10.10, 63-23472-(4)
no. 5, 121p. $10.10, 63-23472-(5)
no. 6, 121p. $10.10, 63-23472-(6)
no. 7, 119p. $9.60, 63-23472-(7)
no. 8, 131p. $10.50, 63-23472-(8)
no. 9, 134p. $10.50, 63-23472-(9)
no. 10, 113p. $9.60, 63-23472-(10)
no. 11, 123p. $10.10, 63-23472-(11)
no. 12, 124p. $10.10, 63-23472-Index-(12) (includes index)

SOVIET SOIL SCIENCE, 1959, NOS. 1-12.
Aug 60-Apr 61, 12 nos.
Order from OTS or SLA

Trans. of Pochvovedenie (USSR) 1959, nos. 1-12.

DESCRIPTORS: *Soils.

no. 1, 141p. $11.00, 63-23473-(1)
no. 2, 134p. $10.50, 63-23473-(2)
no. 3, 138p. $10.50, 63-23473-(3)
no. 4, 125p. $10.10, 63-23473-(4)
no. 5, 125p. $10.10, 63-23473-(5)
no. 6, 120p. $9.60, 63-23473-(6)
no. 7, 125p. $10.10, 63-23473-(7)
no. 8, 133p. $10.50, 63-23473-(8)
no. 9, 125p. $10.50, 63-23473-(9)
no. 10, 129p. $10.10, 63-23473-(10)
no. 11, 121p. $10.10, 63-23473-(11)
no. 12, 128p. $10.10, 63-23473-Index-(12) (includes index)

SOVIET SOIL SCIENCE, 1960, NOS. 1-12.
May 61-Jan 62, 12 nos.
Order from OTS or SLA

Trans. of Pochvovedenie (USSR) 1960, nos. 1-12.

DESCRIPTORS: *Soils.

no. 1, 112p. $9.60, 63-23474-(1)
no. 2, 123p. $10.10, 63-23474-(2)
no. 3, 122p. $10.10, 63-23474-(3)
no. 4, 120p. $9.60, 63-23474-(4)
no. 5, 120p. $9.60, 63-23474-(5)
no. 6, 116p. $9.60, 63-23474-(6)
no. 7, 112p. $9.60, 63-23474-(7)
no. 8, 118p. $9.60, 63-23474-(8)
no. 9, 119p. $9.60, 63-23474-(9)
no. 10, 124p. $10.10, 63-23474-(10)
no. 11, 119p. $9.60, 63-23474-(11)
no. 12, 122p. $10.10, 63-23474-Index-(12) (includes index)

SOVIET SOIL SCIENCE, 1961, NOS. 1-12.
Jan-Oct 62, 12 nos.
Order from OTS or SLA

Trans. of Pochvovedenie (USSR) 1961, nos. 1-12.

DESCRIPTORS: *Soils.

no. 1, 116p. $9.60, 63-23475-(1)
no. 2, 129p. $10.10, 63-23475-(2)
no. 3, 129p. $10.10, 63-23475-(3)
no. 4, 120p. $9.60, 63-23475-(4)
no. 5, 116p. $9.60, 63-23475-(5)
no. 6, 116p. $9.60, 63-23475-(6)
no. 7, 116p. $9.60, 63-23475-(7)
no. 8, 128p. $10.10, 63-23475-(8)
no. 9, 116p. $9.60, 63-23475-(9)
no. 10, 119p. $9.60, 63-23475-(10)
no. 11, 115p. $9.60, 63-23475-(11)
no. 12, 117p. $9.60, 63-23475-Index-(12)
(includes index)

Kuz'min, P[rokofii] P.
SNOW COVER AND SNOW RESERVES, tr. by A. Barouch. 1963, 140p. 162 refs. PL-480 Comm.
Order from OTS $1.50 61-11467

Trans. of mono. Formirovanie Snezhnogo Pokrova i Metody Opredeleniya Snegozapasov, Leningrad, 1960 [176p.].

DESCRIPTORS: *Snow, Atmospheric precipitation, Terrain, Distribution, Melting, Measurement, *Climatology.

The monograph presents a brief survey of the conditions of formation of a snow cover and throws light upon problems directly connected with the determination of the state of an already formed snow cover and its parameters. Considerable space is devoted to the study of the laws of snow deposition in different localities. A discussion of the methods applied to the investigation and calculation of the snow reserves at the beginning of the thaw, and an assessment of the accuracy of such determinations are also presented. New methods and techniques of investigation are indicated in many cases. (Author)

Orlova, N. S. and Gromov, S. V.
SLOPE ANGLES OF LOOSE MATERIALS AND HYPOTHESES OF THE DUST NATURE OF THE LUNAR SURFACE [AND] DETERMINATION OF THE FIGURE OF THE EARTH THROUGH ANOMALIES OF THE VERTICAL GRADIENT OF GRAVITY. 15 July 63, 19p. 13 refs. JPRS: 20167.
Order from OTS $0.75 63-31282

Trans. of [Leningrad U. Uchenye Zapiski] (USSR) 1962, no. 307, p. 179-186, 234-242.

DESCRIPTORS: *Extraterrestrial topography, Dusts, *Geodesics, Gravity anomalies, Moon, Surface properties.

Geodesy

Belikov, E. F., comp.
BIBLIOGRAPHIC INDEX OF GEODETIC LITERATURE FOR 40 YEARS, 1917-56, tr. by W. Burton and others. Feb 63 [635]p. ACIC TC-550.
Order from OTS or SLA $28.50 63-19540

Trans. of mono. Bibliograficheskii Ukázatel' Geodezicheskoi Literatury za 40 Let, 1917-56, Moscow, 1961, 535p.

DESCRIPTORS: *Bibliographies, *Indexes, *Geodesics, Astronomical geodesics, Gravimeters, Triangulation, Leveling rods, Surveying, Construction, Errors, Probability, Theory, Least squares method, Instrumentation, Numerical methods and procedures, Management engineering, Personnel, Training, Research program administration.

Smirnov, L. E. and Frolov, Yu. S.
USE OF SHADOWS IN ORIENTING AERIAL PHOTOGRAPHS. Mar 63 [8]p. 2 refs. RTS-2202.
Order from OTS or SLA $1.10 63-15950

Trans. of Leningrad U. Vestnik (USSR) 1962 [v. 17] no. 12, Ser[iya] Geologii i Geografii [no. 2] p. 120-125.

DESCRIPTORS: *Aerial photography, *Position finding, Errors, Azimuth, Nomographs.

It was found that the use of shadows cast by objects in orienting aerial photography gave rise to substantial errors. The main sources of error were the determination of the direction of the shadow and the derivation of the azimuth at the time of recording. Errors were largely governed by the shape of the object, by the length of the shadow, and by technical aspects of the photograph. The usual limits of error for good objects (high spruce and pine trees, columns and masts) were found to be $\pm 1^{o}$. The azimuth of the shadow, A_T, is related to the azimuth of the sun Ao by; $A_t = A\Theta \pm 180^{o}$. The parallactics triangle is used to determine the latter. In cases where it was found inconvenient to find Ao by use of the parallactic triangle, a nomogram was used which read the A_t directly from the latitude, longitude, date, and time. Weir's nomogram is the most convenient for this purpose.

Geography

GEOGRAPHY, 1962, NO. 5: SELECTED ARTICLES. 2 July 63, 87p. 36 refs. JPRS: 20000.
Order from OTS $2.25 63-31190

Trans. of Ti Li (Chinese People's Republic) 1962, no. 5, p. 81-98, 102-109, 114-117.

DESCRIPTORS: *Geography, *Climatology, *Agriculture, Economics, *Swamps, *Solar radiation, Wind, Damage, *Maps, *China.

Contents:
Boundary problem in comprehensive natural division of China, by Lin Ch'ao
A study of the agricultural economic value of climatological factors, by Ch'i Shao-k'un
Factors in the formation and growth of swamps in Northeast China, by Yang Ping-ken and Chin Shu-jen
Solar radiation in Peiping, by Tso Ta-k'ang and Kung Jan
Wind damage and prevention in Hun Ch'un Basin, by Hao Ling-yung
Compiling the paddy distribution map of Southern China, by Fu Su-hsing.

GEOGRAPHY, 1962, NO. 6: SELECTED TRANSLATIONS. 16 July 63, 45p. 20 refs. JPRS: 20181.
Order from OTS $1.25 63-31291

Trans. of Ti Li (Chinese People's Republic) 1962, no. 6, p. 201-214. 227.

DESCRIPTORS: *Geography, *China, Terrain, Beaches, Agriculture, Climatology, Volcanoes.

Contents:
Characteristics of the China Coast, by Han Mu-K'ang
An agricultural evaluation of thermal and moisture conditions in the Huai-Nan area, by Ch'uan Shih-lin and Szu Hsi-ming
The volcanoes of T'eng Ch'ung, by Mu Kuei-ch'un and Tai He-chih.

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SOVIET GEOGRAPHY: REVIEW AND TRANSLATION, VOL. 4, NO. 4. Apr 63, 52p. 66 refs.
Order from AGS $1.00, $6.00/year

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Geograficheskaya, 1962, no. 6, p. 101-113; Sibirskii Geograficheskii Sbornik [sic] (USSR) 1962, no. 1, p. 85-95; Vsesoyuznoe Geograficheskoe Obshchestvo. Izvestiya (USSR) 1962 [v. 94] no. 5, p. 414-424.

DESCRIPTORS: *Geography, Economics, Population, Distribution, Industries, Labor.

Contents:
On the character of the laws in economic geography, by V. V. Pokshishevskii
On the geography of pre-revolutionary colonization and migration processes in the southern part of the Soviet Far East, by V. V. Pokshishevskii
On the ways of developing former handicraft industries (as illustrated by Gor'kii oblast) by B. S. Khorev and N. A. Rogov.
News notes
Current literature.

Geology

CHINA GEOLOGY, 1963, NO. 2: SELECTED ARTICLES. 23 July 63, 36p. JPRS: 20310.
Order from OTS $1.00 63-31362

Trans. of Chung Kuo Ti Chih (Chinese People's Republic) 1963, no. 2, p. 1-20.

DESCRIPTORS: *Geology, *China, *Economic geology, Copper, Ores (Metal Sources), Hydrology, Minerals, Deposits, Mining engineering, Geophysical prospecting.

Contents:
Metallogenetic laws of copper ore-bearing sand-shale in China and the question of mining prospects, by Kuo Wen-k'uei
Further strengthen hydrogeological work in mining areas, by Chang Keng-sheng
Problems in hydrogeology prospecting of Karst-type mineral deposits, by Hsin K'uei-te.

A METHOD FOR DISSOLVING CARNALLITE IN A NATURAL DEPOSIT. [1963] 7p.
Order from OTS or SLA $1.10 63-14521

Trans. of German patent 135,722, cl. 5b, pub. 4 Nov 02, by Neu-Stassfurt Salt Mine, pat. from 8 July 1900.

DESCRIPTORS: *Minerals, *Solvent action, Potassium compounds, Chlorides, Water, *Mining engineering, Deposits, Rock salt.

A METHOD FOR DISSOLVING CARNALLITE IN A NATURAL DEPOSIT. [1963] 7p.
Order from OTS or SLA $1.10 63-14522

Trans. of German patent 138,562, cl. 121, pub. 4 Feb 03, by Neu-Stassfurt Salt Mine, pat. from 25 Sep 1900.

DESCRIPTORS: *Minerals, *Solvent action, Potassium compounds, Chlorides, Water, *Mining engineering, Deposits, Rock salt.

Antropov, I. A.
DEVONIAN FORAMINIFERA OF TATARY. [1963] 27p.
Order from ATS $19.75 ATS-04Q69R

Trans. of Akad[emiya] Nauk SSSR. Kazansk[ii] Filial. Izv[estiya]: Ser[iya] Geol[ogicheskikh] Nauk, 1959, no. 7, p. 11-33.

DESCRIPTORS: *Foraminifera, Protozoa, *Paleontology, Geology.

Baar, Clemns August.
EARTH-PRESSURE MEASUREMENTS AT ELASTO-PLASTIC DEFORMATION. [1963] 27p. (figs. omitted) 30 refs.
Order from SLA $2.60 63-16262

Trans. of Bergbauwissenschaften (West Germany) 1961, v. 8, no. 19/20, p. 461-468.

DESCRIPTORS: Earth, *Pressure, *Plasticity, *Deformation, *Mining engineering, Salts, Measurements, Geophysics, Rock salt, Hydraulic pressure

Braginskii, S. I.
STRUCTURE OF THE F-LAYER AND REASONS FOR CONVECTION IN THE EARTH'S CORE. 16 July 63, 7p. 13 refs. JPRS: 20183.
Order from OTS $0.50 63-31292

Trans. of Akademiya Nauk SSSR. Doklady, 1963, v. 149, no. 6, p. 1311-1314.

DESCRIPTORS: *Geophysics, *Geochemistry, *Earth, Heat transfer, Structural geology, Convection.

Efros, D. A. and Onoprienko, G. P.
MODELING THE LINEAR OIL DISPLACEMENT BY WATER. [1963] 46p. (non-Russian refs. omitted) 6 refs.
Order from OTS or SLA $4.60 63-16988

Trans. of Vsesoyuznyi Neftegazovyi Nauchno-Issledovatel'skii Institut. Trudy (USSR) 1958, v. 12, p. 331-360.

DESCRIPTORS: *Fluid flow, Oils, *Petroleum, *Water, Rock (Geology), Porous materials, Hydrodynamics, Viscosity, Impregnation, Test facilities.

The theoretical, basic conditions are given which must be fulfilled if one wishes to set up experiments for the expulsion of petroleum by water under conditions of mono- dimensional, linear flow. It is shown that such experiments have meaning only if the samples of the porous medium employed are relatively long. From such samples one may derive the characteristic replacement conditions and can derive the parameters needed in the hydrodynamic calculations. It is also shown that for small samples, on the base of certain characteristics which can be measured directly in the experiments, one can find the displacement on the base of curves of phase permeabilities, so that one may find then the required characteristics by numerical calculation. (Author)

Kovalev, G. A. and D'yakonov, Yu. S.
STRUCTURAL CHARACTERISTICS OF SOME VERMICULITE-LIKE MINERALS FROM THE KOLA PENINSULA (O Strukturnykh Osobennostyakh Vermikulitopobnykh Mineralov s Kol'skogo Poluostrova). tr. by V. A. Solodukhin. [1962] [8]p. (foreign text included) 5 refs. [CSIRO] Trans. no. 6080.
Order from OTS or SLA $1.10 63-15977

Trans. of Vses[oyuznoe] Min[eralogicheskoe] Obsh[chestvo]. Zap[iski] (USSR) 1960, v. 89, no. 4, p. 458-460.

DESCRIPTORS: *Minerals, Vermiculite, *Petrology, Heat treatment, Chemical analysis.

A number of vermiculite-like minerals were subjected to chemical and heat treatment to ascertain certain structural characteristics which distinguish them from common vermiculites. Thermal treatment consisted in heating the specimens to a temperature of 800°C, followed by slow cooling; chemical treatment consisted in boiling mineral fragments for 10-15 minutes in a saturated $BaCl_2$ solution. Of the 12 minerals subjected to heating and to $BaCl_2$ treatment, it was determined that only two minerals had structures entirely typical of vermiculites, while in the other specimens there occurred a change in the structure of the inter-layer spaces. It is concluded that the presence in inter-layer spaces of brucite-like nuclei distinguishes most of the minerals studied from vermiculite.

Kukharskii, M. P. and Svetlakov, Yu. V.
DE-GASSING A SEAM BEING OVER-WORKED, WHERE THE SEAM INTERVAL IS LARGE. [1963] 5p. 1 ref. NCB Trans. A. 2070/JG; [DSIR] NLL M. 3976.
Order from OTS or SLA $1.10 63-19854

Trans. of Ugol' (USSR) 1961, v. 36, no. 4, p. 43-44.

DESCRIPTORS: *Degasification, *Coal, Mining engineering.

Liesegang, Carl.
THE POTASH DEPOSITS OF THE WORLD, [1963] 9p.
Order from SLA $1.10 63-16114

Trans. of Chemische Industrie (West Germany) 1950, v. 2, p. 405-408.

DESCRIPTORS: *Potassium compounds, *Carbonates, Deposits, *Economic geology, Earth.

Nedostup, G. A., Prokof'ev, F. N. and others.
USE OF DIFFERENTIAL GAMMA SPECTROMETRY IN PETOLEUM GEOLOGY; STATEMENT OF THE PROBLEM. [1963] 12p. 3 refs.
Order from OTS or SLA $1.60 63-16996

Trans. of Prikladnaya Geofizika (USSR) 1959, no. 23, p. 193-201.

DESCRIPTORS: *Gamma ray spectroscopy, *Petroleum, *Geology, *Well logging, *Nuclear radiation spectrometers, *Stratigraphy, Water, Salts, Polonium, Beryllium.

Sergeeva, E. I.
KOLA PENINSULA CONGLOMERATES OF THE HYPERBOREAN SERIES (O Konglomeratakh Giperboreiskoi Serii Kol'skogo Poluostrova). Mar 63 [9]p. 15 refs. RTS-2201.
Order from OTS or SLA $1.10 63-15949

Trans. of Leningrad U. Vestnik (USSR) 1962 [v. 17] no. 12, Ser[iya] Geologii i Geographii [no. 2] p. 116-120.

DESCRIPTORS: *Geological survey, Sedimentation, Stratigraphy, Petrology.

Between 1958 and 1960, field studies were made of the lithologic and petrographic properties of the conglomerates of the Hyperborean Series in order to provide data for a new approach to the position and genesis of the conglomerate strata. These studies indicated the following: (1) there is a distinct stratification in the upper part of the conglomerates; (2) there is a random bedding of the fragments without any distinct horizons in the lower and central part of the conglomerates; (3) there are laterations in the petrographic composition of the fragments, and (4) there is a noticeable variation in the composition of the clastic material along the strike of the conglomerates. It is generally concluded that the conglomerate materials were formed by lithogenesis and erosion of rocks in a source area and transported by fluvial means to a trough at the present location of the Hyperborean Series.

Storck, Ulrich.
EVALUATION OF THE MOST RECENT REALIZATION IN ROCK PRESSURE RESEARCH FOR PRACTICAL POTASH MINING. [1963] 34p. (figs. formulae omitted) 25 refs.
Order from SLA $3.60 63-16269

Trans. of Bergbauwissenschaften (West Germany) 1962, v. 9, no. 15/16, p. 341-351.

DESCRIPTORS: *Mining engineering, *Potassium compounds, *Rock salt, Mechanical properties, Elasticity, Plasticity, Supports, Load distribution, Models (Simulations), Rupture.

Szentesi, Andras.
GEOPHYSICAL SYMPOSIUM (NO. 8) [17-19 OCT 62]. 8 July 63, 5p. JPRS: 20051.
Order from OTS $0.50 63-31220

Trans. of Geodezia es Kartografia (Hungary) [1963] v. 15, no. 1, p. 62-63.
Abstract trans. is available from OTS $0.50 in 63-21739, JPRS-19021, 30 Apr 63, 10p.

DESCRIPTORS: *Conference, *Geophysics, *Hungary, Scientific research.

A summary of the conference which was devoted to modern geophysical research methods.

Mineralogy

Dobias, Bohuslav.
FLOATIBILITY OF FLUORITES AND BARITES. III. FLOTATION BY N-ALKYLPYRIDINE-BROMIDES. [1963] 6p. (figs. omitted) 10 refs.
Order from SLA $1.10 63-16186

Trans. of Chemicke Listy (Czechoslovakia) 1957, v. 51, p. 1998-2001.

DESCRIPTORS: *Minerals, *Flotation (Separation), *Fluorspar, Reagents, Alkyl radicals, Pyridines, Bromides, Tests.

Papailhau, J.
APPARATUS FOR SIMULTANEOUS GRAVIMETRIC AND DIFFERENTIAL THERMAL ANALYSIS. [1963] 12p. (figs. omitted) 1 ref.
Order from SLA $1.60 63-16244

Trans. of Soc[iété] Franç[aise de] Minér[algogie et de] Crist[allographie]. Bull[etin] 1959, v. 82, p. 367-373.

DESCRIPTORS: *Analysis, Temperature, *Minerals, Manganese compounds, Phosphates, Calcite, Balances, Calorimetry.

A description is given of an apparatus for the simultaneous tracing of the curves of gravimetric thermal analysis, differential thermal analysis, and temperature of the sample as a function of time, from a very small sample (3 dg at most), up to the temperature of 1250 deg C. The analyses can be carried out in a defined atmosphere or in a controlled gaseous stream. The recording balance is of the type where a constant equilibrium is obtained by using the thrust variations of a fluid on a piece integral with one of the scales. The crucibles, of a special form, are interchangeable and may be made of various materials, according to the chemical nature of the sample. Some diagrams, prepared under various conditions from samples of kaolinite, manganese phosphate, dolomite, siderite, and calcite, show the possibilities of the apparatus. (Author)

Pol'kin, S. I., Bikov, Yu. A., and Shapovalov, G. M.
ON THE PROBLEM OF PYROCHLORE AND ZIRCON FLOTATION. [1963] 21p. 5 refs.
Order from OTS or SLA $2.60 63-16188

Trans. of Russian language article from unidentified source, n.d.

DESCRIPTORS: *Minerals, *Flotation (Separation), Reagents, Zirconium compounds, Silicates, Salts, Tests, Hydrogen ion concentration.

Schultze, Hans-Henning.
THE INFLUENCE OF THE PARTICLE SIZE OF FLUORSPAR, BARITE AND QUARTZ UPON THE FLOTATION OF CRUDE FLUORSPAR WHICH IS RICH IN BARITE AND QUARTZ. [1963] 28p. (figs. omitted) 13 refs.
Order from SLA $2.60 63-16146

Trans. of Bergbauwissenschaften (West Germany) 1958, v. 5, no. 3, p. 70-77.

DESCRIPTORS: *Fluorspar, *Particle size, *Flotation (Separation), *Quartz, Esters, Salts, Minerals, Tests.

Author deals with a new collector for the fluorspar and barite flotation. By tests and theoretical considerations its usability is proved. (Author)

Stieler, Alfred.
PRACTICAL APPLICATIONS OF ELECTROSTATIC DRESSING AND SEPARATION. [1963] 24p. (figs. omitted).
Order from SLA $2.60 63-16134

Trans. of Zeit[schrift] für Erzbergbau und Metallhüttenwesen (West Germany) 1955, v. 8, p. B127-B136.

DESCRIPTORS: *Material separation, Industrial equipment, Ores (Metal sources), Electrostatics, Minerals, Sand, Machines, Materials, Metals.

Szantho, Eugen von.
ELECTROSTATIC BENEFICIATION IN THE INDUSTRY OF ROCKS AND EARTHS. [1963] 21p. 42 refs.
Order from SLA $2.60 63-14603

Trans. of Tonindustrie-Z[ei]t[un]g (West Germany) 1953, v. 77, p. 83-88.

DESCRIPTORS: *Electrostatics, *Material separation, Minerals, Electrical properties, Machines, Operation, Costs.

The essential forces in the electric field which can lead to a separation of material particles are discussed. The separation processes developed from these forces depend essentially on the different conductivity and dielectric constants of the material particles and also on the so-called pyroelectric effect of minerals. The separation process is illustrated in the individual types of separators and suitable industrial devices are described. The electrostatic method is a dry process that seems suitable for grain sizes from 0.1-3 mm. By variation of the high potential from 5000 to 100,000 volts, corresponding to an average field strength of 200,000 volt.cm., through variation of the electrodes and their polarity as well as through special pretreatment of the ware fed in, either by drying, sifting, or chemical surface change, the separation sharpness, is improved and in many cases it is the only way that two minerals can be separated. The throughput efficiency and costs of the process are discussed. It is shown that the purchase costs are relatively high but that the operating costs are very low. The process can contribute, especially as a special process in an existing beneficiation, to increased economy of the entire plant.

Oceanography

Greze, V. N.
AN EXPERIMENT IN THE USE OF THE PLANKTONOMETER IN MARINE PLANKTON STUDIES (Opyt Primeneiya Planktonometra pri Issledovaniyakh Morskogo Planktona). Apr 63 [11]p. 12 refs. RTS-2209.
Order from OTS or SLA $1.60 63-15964

Trans. of Okeanologiya (USSR) 1962, v. 2, no. 2, p. 305-310.

DESCRIPTORS: *Plankton, Marine biology, Population, Distribution, *Nets, Flowmeters.

A comparison was made of the sampling efficiency of the planktonometer and that of the plankton net. Some of the structural details of the planktonometer were described. The principal advantages of this apparatus are: (1) a flowmeter in the intake pipe enables the quantity of water filtered to be determined; (2) a high towing speed yields a larger catch; and (3) towing for a comparatively long period over a great distance yields a more representative sample. The volume of filtered water was found to be directly proportional to the towing speed. However, after numerous repeated collections, the net meshes gradually became clogged and the rate of water movement in the planktonometer fell below towing speed. The total free filter mesh area was calculated to be 1/2 the area of the intake opening. Thus, the internal water velocity and the towing speed were in a ratio of 1:2. Catches were made simultaneously with the planktonometer and with the standard juday net. The quantity of zooplankton determined by the planktonometer exceeded that obtained by the net in every trial. The greater difference occurred in the parallel surface catches when both net and planktonometer were towed at comparatively high speeds. Less difference occurred when oblique fishing with the planktonometer was compared with vertical net fishing.

Maksimov, I. V.
THE NATURE OF THE GREAT EASTERN DRIFT (O Prirode Velikogo Vostochnogo Dreifa). Apr 63 [7]p. 2 refs. RTS-2217.
Order from OTS or SLA $1.10 63-15965

Trans. of Sovetskaya Antarkticheskaya Ekspeditsiya. [Informatsionnyi] Byulleten' (USSR) 1962, no. 32, p. 5-9.

DESCRIPTORS: *Ocean currents, Tides, *Atmospheric motion, Drift, *Gravity anomalies, Oceanology, Sun, Moon.

An emphasis was placed on the shape of the mean surface level of the global ocean as a possible explanation of the origin of the ocean current, the Great Eastern Drift. The position of the mean ocean level was found to vary in response to differences in the gravitational force. The anomolous ocean level occasioned by an anomolous force of gravity at a particular point is given by the equation,

$$H = -\frac{\nu}{g\Sigma}\Delta_g(1-3\sin^2\varphi)(1+\varkappa-h).$$

Deforming forces of the sun and moon on the ocean level were also investigated. It is concluded that the Great Eastern Drift cannot be regarded as a wind-produced current; but as a gravitational current which results mainly from the way in which the anomolous gravitational forces of the earth are distributed and from the deforming forces of the sun and moon.

Vinogradov, V. V.
TRIAL ESTABLISHMENT OF BUOY STATIONS IN THE OCEAN. [1962] [7]p. [DSIR] NLL M. 8997.
Order from OTS or SLA $1.10 63-15222

Trans. of Okeanologiya (USSR) 1962, v. 2, no. 2, p. 346-352.

DESCRIPTORS: *Buoys, *Oceans, Ocean currents, Oceanology, Design, Measurement.

Investigations were made of the suitability of variously designed marine buoys for oceanographic work, especially the measurement of ocean currents. It was found that of the marine buoys produced by industry the most convenient to use were the winter buoy BZ-720, Travel buoy 628 17000 and the "Pinch" type buoy. Specially designed buoys made of foam plastic Mark PS-1 were found to be superior to steel buoys owing to its lighter weight, greater buoyance and good practical performance.

ENGINEERING

USSR SCIENTIFIC ABSTRACTS: ELECTRONICS AND ENGINEERING NO. 2. 23 July 63, 53p. JPRS: 20315.
Order from OTS $1.50 63-31365

Consists of abstracts of articles from USSR scientific and technical journals.

DESCRIPTORS: *Abstracts, *Electronics, *Engineering, *Electronic equipment, *Instrumentation, *Masers, *Lasers, *Circuits, Design, *Communication systems, *Information theory, *Control systems, *Power supplies, *Materials.

Contents:

I. Electronics
Electronic components
Instruments
Masers and lasers
Circuit design
Communications systems
Information theory

II. Engineering
Computers
Control devices
Control systems
Mechanical engineering
Power engineering
Materials
Miscellaneous

Glasov, N. V.
THE ADAPTATION OF RADIOACTIVE ISOTOPES TO ENGINEER RESEARCH [1962] [72]p. 82 refs.
Order from OTS or SLA $7.60 AEC-tr-5525

Trans. of mono. Primenenie Radioaktivnykh Izotopov v Inzhenernykh Izyskaniyakh, Moscow, 1962.

DESCRIPTORS: *Radioactive isotopes, *Engineering, Geology, *Soils, Hydrology, *Nuclear industrial applications, Structural properties, *Soil mechanics, *Well logging.

Quite successful efforts are being made to devise methods and design instruments for use with radioactive isotopes in practical engineering-geological investigations for capital construction in the USSR. This work covers both physicogeological process, the engineering-geological properties of soils and the dynamics of subterranean waters. Particular attention is being paid to labor-consuming processes. Simultaneous attempts are being made to establish the relation between various soil indicators, in order to find from one indicator determined in field conditions other indicators which would give a fuller assessment of soil properties. There is reason to hope that the advances made will lead to a successful solution of the problem of evaluating the structural properties of soils on the site itself. (Author)

Kogan, V. M., Proskurin, V. A., and Tymchur, V. A.
A TWO-REGIME GYROCOMPASS. 12 Mar 63 [4]p. FTD-TT-62-1897; AD-299 669.
Order from OTS or SLA $1.10 63-19185

Unedited rough draft trans. of Soviet patent 146058 (736974/26) 3 July 61.

DESCRIPTORS: *Gyro compasses, Operation, Design.

The invention involves a two-regime gyrocompass containing a gyroscope suspended on a tape suspension in a vertical gimbal, a horizontal plate with a bracket for suspending the sensitive element, a system of communicating vessels, a servosystem, and a moment sensor differing in that for the purpose of shifting the instrument into the gyroazimuth regime of operation the system of communicating vessels is made to be rotated about the vertical axis until the vertical plane passing through the centers of the vessels coincides with the horizontal axis of the suspension of the sensitive element. (Author)

Leiner, Franz.
DRAWING DEVICE FOR DRAWING BLOCKS, tr. by J. R.-P. 7 Mar 63, 9p. (figs. omitted).
Order from OTS or SLA $1.10 63-19064

Trans. of Germany patent 520,502, cl. 70e, gr. 10, pat. from 16 Aug 27, granted 19 Feb 31, pub. 11 Mar 31.

DESCRIPTORS: *Drafting, Materials.

Strebelle, J. R.
THE BALANCE SHEET FOR TWO YEARS OF EXPERIENCE USING THE MAGNETIC APPARATUS A.C.M.I. FOR THE INSPECTION OF MINE CABLES. [1963] 8p.
Order from SLA $1.10 63-16868

Trans. of Annales des Mines de Belgique, 1957, no. 5, p. 420-423.

DESCRIPTORS: *Cables (Mechanical), Hoists, *Test equipment, Test methods, Mechanical engineering, Magnetic properties.

Aeronautical Engineering

Grigoreva, O. V. and Kelzon, A. S.
CALCULATING THE INERTIA OF A RUDDER IN CERTAIN GUIDANCE PROBLEMS. 19 Apr 63 [12]p. 6 refs. FTD-TT-62-1683.
Order from OTS or SLA $1.60 63-19494

Unedited rough draft trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Aviatsionnaya Tekhnika (USSR) 1961, no. 4, p. 22-29.

DESCRIPTORS: *Aerial rudders, *Inertia, Inertial guidance, Inertial navigation, *Proportional navigation, Rotation, Angle of attack, Control, *Guidance, Equation of motion.

Consideration is given to the conditions of stable guidance with consideration of rudder inertia when approaching the zero angle of lead, with constant angle of lead, and by the method of proportional navigation.

Mattolin, Scipione.
TRANSPORT AIRCRAFT WITH DISK-SHAPED WINGS, COMBINING THE KINEMATIC FLIGHT CHARACTERISTICS OF THE HELICOPTER AND THE AIRPLANE, OPERATING AT ANY SPEED, EVEN SUPERSONIC, WITH HIGH DYNAMIC EFFICIENCY, ABSOLUTE FREEDOM OF MANEUVER, GREAT CARRYING CAPACITY AND LONG RANGE, tr. by P. C. C. 25 Apr 63, 18p. (figs. omitted).
Order from OTS or SLA $1.60 63-19620

Trans. of Italian patent 533,751, cl. VIII, appl. 17 May 55, granted 27 Sep 55, printed Mar 58.

DESCRIPTORS: *Transport planes, Vertical take-off planes, Tailless airplanes, *Ring wings, *Aerodynamic characteristics, Design, Jet engines.

Raspevin, K.
COMMANDERS OF ROTOR-BORNE CRAFT. 11 Mar 63 [7]p. FTD-TT-62-1674. AD-401 726.
Order from OTS or SLA $1.10 63-19163

Unedited rough draft trans. from Pravda [Moscow] (USSR) 1962, 18 Sep, 1p.

DESCRIPTORS: *Helicopters, Flight speeds, Aviation personnel, Flight testing.

An account of the MI-6 helicopter for which 11 world flight records are claimed.

[Yeh, Tien-ch'i] and Sivchikov, B. E.
CALCULATION OF NON-STATIONARY TEMPERATURE FIELDS OF A STRUCTURE WITH CONSIDERATION OF THE HEAT RADIATION DURING NON-STEADY FLIGHT PROGRAMS [AND] EQUILIBRIUM EQUATIONS FOR STATIC BENDING AND FREE VIBRATION OF IRREGULARLY SHAPED CANTILEVER PLATES. 27 Mar 63 [29]p. 14 refs. FTD-TT-62-1769.
Order from OTS or SLA $2.60 63-19164

Unedited rough draft trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Aviatsionnaya Tekhnika (USSR) 1962, no. 2, p. 56-64 and 86-94.

DESCRIPTORS: *Aircraft, *Structures, Temperature, *Aerodynamic heating, Heat transfer, Partial differential equations, Numerical analysis, *Cantilever beams, Metal plates, Deflection, Vibration, Calculus of variations.

Chemical Engineering

PETROLEUM INDUSTRY, 1940, VOL. 21, NO. 3(8): [TABLE OF CONTENTS AND SELECTED ABSTRACTS] [1962] 3p. 7 refs.
Order from OTS or SLA $1.10 62-10764

Abstract trans. of Neftyanoe [Khozyaistvo] (USSR) 1940, v. 21, no. 3(8) p. 51-68.

DESCRIPTORS: *Petroleum industry, Petroleum, Refineries, Storage, Geology, Well drilling, Mining engineering, Drills, Safety, *Abstracts, *Indexes, Geophysical prospecting.

Contents:
Losses in the oil refining industry, by I. I. Gershengorn
Possible new oil resources in northeastern Caucasus, by I. O. Brod
Prospecting and adaptation of oil fields in the Prikurinskaya lowland should be increased, by G. P. Ovanesov.

PROCEDURE AND APPARATUS FOR SOLIDIFICATION OF GASES IN MASS FORM. [1963] [10]p.
Order from OTS or SLA $1.10 63-14780

Trans. of French patent 664,447, gr. 14, cl. 6, by Solid Carbonic Co., Ltd., U. S. A., appl. 22 Nov 28, issued 23 Apr 29, pub. 3 Sep 29.

DESCRIPTORS: *Phase studies, Gases, *Carbon dioxide, Pressure, *Solidified gases.

PROCESS FOR PRODUCING DERIVATIVES OF PYRROLIDINE, tr. by J. B. 4 Feb 63, 5p. (figs. omitted).
Order from OTS or SLA $1.10 63-15770

Trans. of French patent 1,000,310, gr. 14, cl. 1, by Badische Anilin & Soda-Fabrik (I. G. Farbenindustrie Aktiengesellschaft, en cours de Dissolution) sous Administration Sequestre Francaise, Germany, appl. 24 Nov 49, granted 10 Oct 51, pub. 11 Feb 52 (appl. filed in Germany, 18 June 49).

DESCRIPTORS: Pyrroles, *Pyrrolidines, Manufacturing methods.

The invention relates to a process for manufacturing derivatives of pyrrolidine, characterized in that 1,4-dihalogenbutanes are reacted with diamines containing at least one primary amino group, or with primary oxyamines. (Author)

PROCESS FOR SEPARATION OF ALKALI METAL NITRATE AND AMMONIUM CHLORIDE FROM SALINE MIXTURES ARISING FROM THE TRANSFORMATION OF ALKALI METAL CHLORIDES BY MEANS OF AMMONIUM NITRATE. [1963] 4p.
Order from OTS or SLA $1.10 63-14531

Trans. of German patent 768,914, by I. G. Farbenindustrie Aktiengesellschaft, requested 21 Feb 34, delivered 28 May 34, pub. 16 Aug 34.

DESCRIPTORS: *Alkali metal compounds, *Nitrates, *Ammonium radicals, *Chlorides, Separation, Oils, *Flotation, Chemical reactions.

PROCESS FOR SEPARATION OF ALKALI-METAL NITRATE AND AMMONIUM CHLORIDE SALT MIXTURES OBTAINED BY REACTION OF ALKALI-METAL CHLORIDE AND AMMONIUM NITRATE. [1963] 6p.
Order from OTS or SLA $1.10 63-14524

Trans. of German patent 567,844, appl. 24 May 30, announced 22 Dec 32, issued 8 Feb 35, by Bamag-Meguin A.-G.

DESCRIPTOR: *Alkali metal compounds, *Nitrates, *Ammonium radicals, *Chlorides, Substitution reactions, *Flotation, Separation, Oils.

SEPARATION OF CALCIUM METAL BY THE FUSION ELECTROLYSIS OF CALCIUM CHLORIDE OR MIXTURES CONTAINING CALCIUM CHLORIDE. 4 Nov 48, 8p. 5 refs.
Order from OTS or SLA $1.10 63-10966

Trans. from unidentified German mono. pub. by Deutsche Gold- und Silberscheideanstalt, A.G., Frankfurt, a.M., n.d. (PB-74417A).

DESCRIPTORS: *Calcium, Production, Separation, Fused materials, Calcium compounds, Chlorides, Mixtures, Electrolysis, *Electrolytic cells, Design, Operation.

The possibility of preparing calcium metal is discussed on the basis of data from the literature. Moreover an answer is obtained to the question whether, in the Rheinfelden Works, the production of calcium metal can be undertaken in association with the forthcoming work on the preparation of Durferrite ignition salt with the use of the now idle apparatus for cerium electrolysis. These considerations lead to the conclusion that it would be possible to obtain a calcium metal production of about 1000 kg. without important changes in this apparatus. (Author)

USSR INDUSTRIAL DEVELOPMENT: SOVIET CHEMICAL INDUSTRY NO. 93. 18 July 63, 38p. JPRS: 20224.
Order from OTS $1.25 63-31316

Trans. from Molodaya Gvardiya (USSR) 1963, no. 4; and 19 selected articles from Apr 63 issues of 13 Russian newspapers.

DESCRIPTORS: *Industrial production, *Chemical industry, *Chemical engineering, Industrial plants, Gasoline, Fertilizers, Cellulose, Paper, Chromium compounds, Tin, Ores (Metal sources), Pyridines, *Glass, Thermal radiation, Talc, Tires, *Binders, *Dyes, Machinery, Construction, Laminated glass.

Contents:
Minnibaevskii natural gasoline plant
New chemical fertilizer combine opened in Lithuania
Completion of the Kotlas cellulose-paper combine
Startup of the Novotroitsk plant of chromium compounds
Defective equipment supplied to Georgian chemical enterprises
Construction of tin ore combine in the hills of Miao Chan
Startup of the pyridine unit at the Novolipetsk metallurgical combine
Glass that resists thermal radiation
Completion of drying and crushing shops at the Miass talc combine
Capacity of the Chimkent tire recapping plant
New wide-track tire casing designed for GAZ-53 motor vehicles
New resin binder produced by plant imeni Kirov
Development of large-scale chemical industry in the Donets basin
New dyes produced by Rubezhnoe chemical combine
Labor achievments by the builders of the large-scale chemical industry
Lagging construction of machinery for the chemists, by F. Khabibullin
Lagging startups of glass plastics shops in Leningrad, by N. Chirskov
Improved production and efficiency in Konstantinovka plants, by V. Nevedrov
New crash komsomol construction projects, by A. Pavlov
Inspection of construction projects of large-scale chemical industry, by Ya. Reznikov and others.

USSR INDUSTRIAL DEVELOPMENT: SOVIET CHEMICAL INDUSTRY NO. 94. 18 July 63, 58p. JPRS: 20232.
Order from OTS $1.75 63-31321

Trans. of Promyshlennoe Stroitel'stvo (USSR) 1963 [v. 41] no. 5, p. 2-3; Gazovaya Promyshlennost' (USSR) 1963 [v. 8] no. 5, p. 1-2; and 23 selected articles from May-June 63 issues of 12 Russian newspapers.

DESCRIPTORS: *Industrial production, *Chemical industry, *Chemical engineering, *Industrial plants, Construction, *Natural gas, *Microorganisms, Proteins, Amino acids, Antibiotics, Vitamins, Enzymes, *Fertilizers, *Biosynthesis, Conferences, Lactams, Phosphates, Fibers (Synthetic), *Cotton, Plastics, *Computers, Rubber, *Styrene plastics, *Polymerization, Laminates, Cordage, *Sulfuric acid, Magnesium compounds, Nitrates, Herbicides, Butadienes, *Refineries, Electrochemistry.

Contents:
Accelerate the construction of chemical industry enterprises
Natural gas as a raw material for chemical industry
The microbiological synthesis industry, by A. Imshenetskii
Conference of komsomol builders at Severodonetsk, by K. Kostenko and G. Yakovlev
Production of caprolactam will start in Rustavi
Improving production at the Kemerovo nitrogen fertilizers plant, by M. Kryukov
Troubles at the Vinnitsa superphosphate plant
Building the Sokal' artificial fiber plant
The growth of the Kirovakan artificial fiber plant, by N. Azaryan
New products developed from cotton at the Fergana Furan compounds laboratory, by V. Tatarinov
The chemization of Central Asian economy
The Khar'kov plastics plant is expanding its output
The Slavyansk soda combine introduces a computer, by I. Ognivko

Rubber accessories offered for sale
A new method of polymerization
Building the paper-laminated plastics shop in Vil'nyus
Cord fiber production is started in Kalinin
The Kedainyai combine starts producing sulfuric acid, by R. Kulikauskas
The production of magnesium-nitrate fertilizer is started in Moscow
Production of the herbicide crotylin is started in Erevan
Production of butadiene is started in Omsk, by V. Golubev
Expanding the Chirchik electrochemical combine
Building chemical-industry enterprises in Sumgait
Expanding the Omsk petroleum refinery, by S. Otradnov
The Chirchik electrochemical combine is expanding, by A. Sokolov.

USSR INDUSTRIAL DEVELOPMENT: SOVIET CHEMICAL INDUSTRY NO. 95. 19 July 63, 39p.
JPRS: 20248.
Order from OTS $1.25 63-31328

Trans. of Arkhitektura SSSR, 1963, no. 10, p. 1-3; Shakhtnoe Stroitel'stvo (USSR) 1963 [v. 7] no. 5, p. 32; Montazhnye i Spetsialnye Raboty v Stroitel'stve (USSR) 1963 [v. 25] no. 5, p. 1-3; Bukhgalterskii Uchet (USSR) 1963, no. 5, p. 21-25; and 15 selected articles from Feb, Apr-May 63 issues of 9 Russian newspapers.

DESCRIPTORS: *Industrial production, *Chemical industry, *Chemical engineering, Formaldehyde, Solutions, *Plastic films, Polyethylene plastics, Agriculture, *Industrial plants, Construction, Design, *Industrial diamonds, Synthetic stones, Synthetic rubber, Cellulose acetates, Ammonia, Computers, Sodium compounds, Silicates, Vinyl radicals, Acetates, Tires, *Plastics, Potassium, *Economics, Costs, Classification, Distribution (Economics).

Contents:
Formalin production starts at Kiviyli, by E. Saare
Polyethylene film for agriculture produced by Riga polyethylene products plant
New organic synthesis plant at Kazan'
Synthetic diamonds for industry
Synthetic rubber for Cuba produced by Erevan synthetic rubber plant, by S. Kuznetsov
Acetyl cellulose produced at Erevan
Progress at the Kedaynyai chemical combine
Computer controls ammonia manufacture installed at Lisichansk chemical combine
Erevan household chemical plant modernizes water glass production
Lisichansk chemical combine to produce vinyl acetate
Vikel'nii Tashkent chemical plant closed
Construction at the Sumgait petrochemical combine
Volgograd synthetic rubber plant to produce tires
New process at the Vil'nyus plastic products plant
Plastics manufacture in the Ukraine
Chemical plant design
The second Berezniki potassium combine, by D. P. Dukhovlinov
Crash programs of large-scale chemical industry
Classification and distribution of expenditures of chemical enterprises, by E. Gol'dshtein.

USSR INDUSTRIAL DEVELOPMENT: SOVIET CHEMICAL INDUSTRY NO. 96. 19 July 63, 49p.
JPRS: 20253.
Order from OTS $1.50 63-31331

Trans. of Nauka i Tekhnika (Latvian SSR) 1963, no. 2, p. 4-7 and 25 selected articles from 1963 issues of 14 Russian newspapers.

DESCRIPTORS: *Industrial production, *Chemical industry, *Chemical engineering, *Industrial plants, Construction, Pipes, Fertilizers, Ammonia, Nitrogen, Synthetic rubber, Herbicides, Glass textiles, Shales, Distribution (Economics), Conferences, Gases, Coke, Oxygen, *Vinyl plastics, Plastic tubing, Polyethylene plastics, *Boats.

Contents:
Chemical enterprises in Valmiera, by Ya. Garkalns
Building the drain pipe plant at Iode, by Ya. Garkalns
Building the ammonia fertilizers plant in Puikule, by Ya. Garkalns
Building the nitrogen fertilizers plant near Dorogobuzh
Improving the performance of the Sumgait synthetic rubber plant, by B. Agaev
Coordinate the construction program in Sumgait
The Ufa chemical plant begins to produce more herbicides
Building the Ionava nitrogen fertilizers plant, by P. Digris
Improving the performance of the Novomoskovsk chemical combine
Building the Astrakhan' fiberglass fabrics plant
Building the Volzhskii chemical combine, by V. Lyubomirskii
Expansion of the Kokhtla-Yarve shale combine
Activities of the chemistry research institute in Khar'kov
Urgent help is needed by the Omsk synthetic rubber plant, by M. Rusakov
Inefficient distribution of rubber supplies from Sumgait, by Gamidov
The Severodonetsk Komsomol Conference on Chemical-Industry Construction, June 63
The atmosphere at the Kiev-Svyatoshinskii chemical products plant
Expanding the mining of potash in Soligorsk
Delays in building the Grodno nitrogen fertilizers plant, by L. Savitskii and others
Improving the utilization of coke-oven gas at Yasinovka
Oxygen and nitrogen production at Erevan
Improving the production process at the Erevan Polivinilatsetat plant
Oxidation process regulated by remote control at Polivinilatsetat plant
The chemical industry of Moldavia
The Lugansk tube-rolling plant starts producing polyethylene tubing
The Rustavi nitrogen fertilizers plant opens an anon shop, by R. Beridze
Fabricating fiberglass boats in Latvia, by A. Abdullin
Expanding the Cheleken chemical plant.

USSR INDUSTRIAL DEVELOPMENT: SOVIET CHEMICAL INDUSTRY NO. 97. 22 July 63, 37p.
JPRS: 20293.
Order from OTS $1.00 63-31352

Trans. of Promyshlennost' Armenii (USSR) 1963 [v. 6] no. 2, p. 71 and 8 selected articles from 1963 issues of 8 Russian newspapers.

DESCRIPTORS: *Industrial production, *Chemical industry, *Chemical engineering, *Tires, Additives, Aging, *Industrial plants, Construction, Alcohols, Fibers (Synthetic), *Plastics, Paints, Economics.

Contents:
Omsk tire plant produces anti-aging compound
Problems of the Orsk synthetic alcohol plant, by V. Sekarev and others
Merger in the chemical industry facilities
Saratov synthetic alcohol plant to produce nitron
New tire recapping facility at Kopeisk, by V. Zdobnov
Construction at the Volgograd chemical combine is lagging, by P. Chernushchenko and V. Chernov
Problems of plastics production, by V. Braginskii
Problems of the Zagorsk paint and varnish plant, by G. Ustinov
The chemical industry of the Moscow region, by V. Demchenko.

USSR INDUSTRIAL DEVELOPMENT: SOVIET CHEMICAL INDUSTRY NO. 98. 23 July 63, 49p. JPRS: 20312.
Order from OTS $1.50 63-31364

Trans. of Promyhlennost' Armenii (USSR) 1963 [v. 6] no. 3, p. 72; Sovetskie Profsoyusy (USSR) 1963 [v. 19] no. 8, p. 3; no. 9, p. 1-2; and 16 selected articles from 1963 issues of 8 Russian newspapers.

DESCRIPTORS: *Industrial production, *Chemical industry, *Chemical engineering, *Radioactive isotopes, *Industrial diamonds, Styrene plastics, Herbicides, *Industrial plants, Construction, Isoprene, Fibers (Synthetic), Fertilizers, Nitrogen, Labor, *Labor unions, Tires, Plastics, *Economics.

Contents:
Miscellaneous news items on industry in Armenia
Offers to buy and sell equipment
The use of radioisotopes in Kazakhstan, by R. Akhapkin
The use of mass-produced industrial diamonds, by I. Nerovnii
Polystyrene production being added at the Gorlovka plant
New weed-killer production at Ufa
Progress in construction of the Razdan combine, by V. Mnatsakanyan
Construction under way at the Novgorod chemical combine, by Yu. Gribov
Thriving socialist competition in construction of the Sterlitamak isoprene plant
Construction of an artificial fiber plant started near Sokal'
Start-up difficulties at the Fergana nitrogenous fertilizer plant, by M. Kurmaev
Incentives to self-improvement for young specialists, by S. Kul'chitskii
Planning will be improved if the responsibility of the planners continues until start-up, by P. Novikov
Increasing labor productivity is the task of the trade unions in Krasnoyarskii Krai, by I. Kudryavtsev
Problems in the organization of tire-reconditioning shops, by E. Temchin
Generally good conditions at the Echmizdzin plastics plant, by M. Yur'ev
A report on actions resulting from "business blub" complaints, by V. Evseev and others
The importance of builders to the growth of the chemical industry, by K. Pudovkin and B. L'vov
How the trade union organizations can contribute to the accelerated growth of the chemical industry.

USSR INDUSTRIAL DEVELOPMENT: SOVIET CHEMICAL MACHINE BUILDING NO. 27. 16 July 63, 35p. JPRS: 20187.
Order from OTS $1.00 63-31295

Trans. of Mashinostroitel' (USSR) 1963 [no. 5] p. 20; Nauchno-Teknicheskie Obshchestva SSSR, 1963 [v. 5, no. 5] p. 8; and 15 selected articles from 1963 issues of 12 Russian newspapers.

DESCRIPTORS: *Industrial production, *Chemical engineering, *Machines, Construction, *Industrial plants, *Compressors, Gases, Benzine, *Distribution (Economics), *Pumps, Fibers (Synthetic), Centrifuges, Values.

Contents:
Chemical machinebuilding in Lugansk
Personal plans for technological work, by A. Grigor'ev
Kuleshovskii gas-benzine plant, by Yu. Rytov
Sumi Machinebuilding plant, by S. Roslii
Delivery of chemical equipment, by V. Ryabchikov
Penza compressor plant, by A. Durnov and others
Panevezhie compressor plant, by I. Ivanovas
Kishlinskii machinebuilding plant, by N. Guliev
Pump manufacture in Kishinev, by V. Pereleshin
New chemical equipment from Penza plant, by R. Galitskaya
Delays in major chemical equipment
New equipment for synthetic fiber plants
News briefs.

USSR INDUSTRIAL DEVELOPMENT: SOVIET CHEMICAL MACHINE BUILDING NO. 28. 22 July 63, 22p. JPRS: 20280.
Order from OTS $0.75 63-31344

Trans. of Khimicheskoe Mashinostroenie (USSR) 1963 [v. 6] no. 3, p. 1-2, 28-29, 41-42, 45-47.

DESCRIPTORS: *Industrial production, *Chemical engineering, *Machines, Construction, Quality control, *Pipes, *Plastic tubing, Tests, *Centrifuges, *Filters (Fluid) *Driers (Apparatus), *Heaters, *Heat exchangers, Valves.

Contents:
Raising the quality of chemical equipment is a foremost task for machine builders, by M. D. Mazo
Testing and introduction of vitreous plastic pipe, by P. V. Vlasov and V. T. Kopylov
Automatic rubberized centrifuges, by B. L. Trakhtenberg
New machines, equipment and instruments.

Bauer, Oskar Willy.
THE CATALYTIC ISOMERIZATION OF SOME GASOLINE HYDROCARBONS. Doctoral thesis. 10 Apr 41 [39]p. (introduction and certain details of apparatus or procedure omitted or summarized) 53 refs.
Order from SLA $3.60 63-10481

Trans. of thesis presented at Eidgenössische Technische Hochschule, Zurich (Switzerland) pub. Prague, 1940.

DESCRIPTORS: *Gasoline, Hydrocarbons, *Molecular isomerism, *Catalysis, Alkanes, *Butanes, *Pentanes, *Hexanes, *Heptanes, *Octanes, Catalysts, *Aluminum compounds, Chlorides, Moisture, Oxygen, Hydrogen, Polymers, Reaction kinetics, Chemical analysis, Reagents, Antimony compounds, Halides, Potassium compounds, Bromides.

Becker, Sam B.
PROCESS AND DEVICE FOR THE OXIDATION OF NAPHTHALENE HYDROCARBONS. [1963] 22p. (figs. omitted).
Order from OTS or SLA $2.60 63-16397

Trans. of German patent 895,591, cl. 12o, gr. 14, St 2099 IVd/12o, by Standard Oil Co., U. S. A., pat. from 9 Sep 53, app. pub. 5 Mar 53, granted 24 Sep 53, issued 5 Nov 53 (priority of the appl. in the U. S. A. 27 June 41).

DESCRIPTORS: *Phthalic anhydride, Synthesis (Chemistry), Hydrocarbons, *Naphthalenes, Alkyl radicals, Vapors, Oxidation, Catalysts, Fluidized solids, *Towers (Chemistry), Heat exchangers.

The invention relates to an improved process and to a device for carrying out the oxidation of naphthalene and alkyl naphthalenes, especially for obtaining phthalic anhydride. (Author)

Bienert, A.
SYNTHETIC CRYOLITE FROM CRUDE AND WASTE FLUORSPARS WHICH ARE RICH IN SILICIC ACID. II. DIGESTION OF THE FLUORSPAR. [1963] 18p. 1 ref.
Order from SLA $1.60 63-16117

Trans. of Chemie-Ing[enieur]-Techn[ik] (West Germany) 1957, v. 29, no. 11, p. 721-726.
Another trans. is available from ATS $14.75 as ATS-90K26G [1958] 12p.

DESCRIPTORS: *Cryolite, Synthesis, *Fluorspar, Processing, *Silicic acids.

Described is a cyclic digestion procedure, which shows economical promise with respect to the heat required, for fluorspars which are high in gangue, and especially SiO_2, which procedure is a combination of wet digestion, done at a liquid medium, and a dry digestion, which uses hot, concentrated sulfuric acid. The H_2SiF_6 produced this way is used in the manufacture of synthetic cryolite. (Author)

Blinov, B. I., Makarov, I. A. and Pinkhusovich, R. L.
APPLICATION OF APPARATUS FOR RADIOACTIVE CONTROL IN A HYDROGENATION PLANT. [1963] 8p. (figs. refs. omitted).
Order from OTS or SLA $1.10 63-16971

Trans. of Khim[iya] i Tekhn[ologiya] Topliv i Masel (USSR) 1959, v. 4, no. 1, p. 15-19.

DESCRIPTORS: *Liquid level gages, *Liquid level control, *Radioactive isotopes, Gamma rays, Hydrogenation, Separation, *Horizontal indicators, Handling, Coal, Coke, Industrial plants.

A construction of radioactive level indicators and controllers in thick-walled vessels was created, which permitted a substantial reduction of the radiation intensity of the source by simultaneously using the wall as a protection against the harmful effects of gamma radiation. The reliability and effectiveness of these devices was substantiated in continuous operation. A scheme was developed for the control and signaling of trouble in the reloading devices of transporting facilities for coal and coke. (Author)

Churaev, N. V.
A STUDY OF THE MECHANISM OF MOISTURE TRANSFER DURING THE DRYING OF COLLOIDAL CAPILLARY-POROUS MATERIALS. July 63, 5p. 24 refs.
Order from ICE in v. 3, no. 3, $15.00/year

Trans. of #Inzhenerno-Fizicheskii Zhurnal (USSR) 1963 [v. 6] no. 2, p. 31-[37].
Another trans. is available from OTS $4.00 in 63-31047, JPRS-19701, 17 June 63, 258p.

DESCRIPTORS: Chemical engineering, Dehydration, *Moisture, *Porous materials, *Tracer studies, Peat.

Cornides, I. and Balla, S.
COMPUTATION AND OPERATION ANALYSIS WITH ELECTRONIC COMPUTERS IN CHEMICAL INDUSTRY July 63, 6p. 9 refs.
Order from ICE in v. 3, no. 3, $15.00/year

Trans. of Magyar Kemikusok Lapja (Hungary) 1962 [v. 17] no. 9, p. 405ff.

DESCRIPTORS: Chemical engineering, *Analog computers, Computers, Separation, Carbon compounds, Monoxides, Nitrogen, Synthesis (Chemistry), Ammonia, *Chemical industry, Hungary.

Daeves, Karl.
LONG-RANGE FORECASTS IN THE CHEMICAL INDUSTRY. [1963] [8]p.
Order from SLA $1.10 63-16061

Trans. of Chemische Industrie (West Germany) 1952 [v. 4, no. 12] p. 1010-1012.

DESCRIPTORS: *Chemical industry, Industrial production, *Economics, Mathematical analysis.

Dytnerskii, Yu. I. and Kasatkin, A. G.
EQUATION GÉNÉRALE POUR LE CALCUL DES COEFFICIENTS DE TRANSFERT DE MASSE DANS LES COLONNES A PLATEAUX [A Generalized Equation for the Determination of the Mass Transfer Coefficient in Columns Having Plates] tr. by Kefeli. 13 Nov 62 [16]p. 11 refs. CEA Trans. no. R 1674.
Order from OTS or SLA $1.60 63-15497

Trans. in French of Khim[icheskaya] Promyshl[ennost' (USSR) 1962, no. 4, p. 288-290].

DESCRIPTORS: *Towers (Chemistry), *Mass transfer, Effectiveness, Determination, Vapors, Absorption, Equations.

Gel'perin, N. I., Pebalk, V. L., and Chicherina, T. G.
INVESTIGATION OF A PULSATING PACKED EXTRACTION COLUMN. July 63, 5p. 23 refs.
Order from ICE in v. 3, no. 3, $15.00/year

Trans. of Khim[icheskaya] Prom[yshlennost'] (USSR) 1963, no. 2 [p. 111-115].

DESCRIPTORS: Chemical engineering, *Towers (Chemistry), Separation, *Mass transfer.

Gillet, A. and Urlings J.
COMPARATIVE PYROLOSIS OF WOOD, CELLULOSE, LIGNIN AND COALS. Pt. 1. SYSTEMATIC GRADUATED PYROLOSIS OF WOOD. [1962] 26p. 9 refs.
Order from SLA $2.60 63-16880

Trans. of Chimie at Industrie (France) 1952, v. 67, no. 6, p. 909-919.
Another trans. is available from K-H $32.50 as K-H 12083-a [1962] 26p.

DESCRIPTORS: *Wood, Pyrolysis, Cellulose, Lignin, Coal.

Gillet, Alf. and Urlings, J.
COMPARATIVE PYROLYSIS OF WOOD, CELLULOSE, LIGNIN AND COALS: PT. 2 [CONTINUATION] FROM WOOD TO COAL. [1962] 2p. 1 ref.
Order from SLA $1.10 63-16878

Trans. of Chimie et Industrie (France) 1953, v. 70, no. 1, p. 64.
Another trans. is available from K-H $2.50 as K-H-12083-c, 1962, 2p.

DESCRIPTORS: *Wood, *Cellulose, *Lignin, *Coal, Pyrolysis

See also 63-16879

Gillet, A. and Urlings, J.
COMPARATIVE PYROLYSIS OF WOOD, CELLULOSE, LIGNIN AND COALS. PT. 2[1]. FROM WOOD TO COAL. [1962] 13p. 1 ref.
Order from SLA $1.60 63-16879

Trans. of Chimie et Industrie (France) 1952, v. 68, p. 55-60.
Another trans. is available from K-H $16.25 as K-H-12083-b, 1962, 13p.

DESCRIPTORS: *Wood, *Coal, Pyrolysis, Cellulose, Lignin.

See also 63-16880

Hedin, C. B.
METHOD OF EVAPORATING SOLUTIONS ESPECIALLY FOR THE SEPARATION OF SMALL CRYSTALS. [1963] [6]p.
Order from OTS or SLA $1.10 63-14539

Trans. of Swedish patent 113,423, cl. 12:a:2, granted 11 Jan 45, pat. from 12 Apr 43, pub. 13 Mar 45 (appl. 12 Apr 43, 2618/1943) by Ljungstrom Swedish Turbine Works, Inc.

DESCRIPTORS: *Evaporation, Solutions, *Crystals, Material separation.

Hempel, Walther and Tedesco, Hermann.
STUDIES ON THE AMMONIA SODA PROCESS. [1963] 8p. (figs. tables omitted) 6 refs.
Order from SLA $1.10 63-14129

Trans. of Angew[andte] Chemie (Germany) 1911, v. 24, p. 2459-2469.

DESCRIPTORS: *Sodium compounds, *Carbonates, Production, Chlorides, *Ammonia, Carbonic acids, *Solvay process.

Hobler, T.
A METHOD OF STABILIZING THE MASS TRANSFER-COEFFICIENT IN CASES OF MAJOR FLOW RATE CHANGES. July 63, 3p. 1 ref.
Order from ICE in v. 3, no. 3, $15.00/year

Trans. of Przemysl Chemiczny (Poland) 1962 [v. 18(41)] no. 10, p. 590-[591].

DESCRIPTORS: Chemical engineering, *Mass transfer, *Towers (Chemistry), Carbon dioxide, Oxides, Fluid flow, Velocity.

Kato, Nagaharu, Hayashi, Kiyoshige and others.
A PROCESS OF MANUFACTURING P-XYLENE OF HIGH PURITY. July 63, 12p. (figs. omitted).
Order from SA $19.00 SA Code-P-145

Trans. of published Japanese patent 7221/1962, cl. 16-C-1 (13-A-32) (16-C-15) (13-B-15) appl. no. 13661/1959 filed 30 Apr 59, pub. 5 July 62, by Maruzen Sekiyu Co.

DESCRIPTORS: *Xylenes, Manufacturing methods, Molecular isomerism, Purification, Fractionation, *Crystallization, *Tanks (Containers), Refrigeration systems, Design

Kawamoto, Masami and Kato, Seiichi.
A PROCESS FOR THE CONTINUOUS PRODUCTION OF AMMONIUM NITRATE OF LOW APPARENT SPECIFIC GRAVITY. July 63, 11p. (figs. omitted).
Order from SA $19.00 SA Code-P-137

Trans. of published Japanese patent 8262/1962, cl. 15-L-222 (29-C-1) appl. no. 8268/1960 filed 16 Mar 1960, pub. 14 July 62, by Mitsubishi Kasei Kogyo Co., Ltd.

DESCRIPTORS: *Explosive materials, *Ammonium compounds, *Nitrates, Production, Density, Driers (Apparatus), *Vacuum apparatus, *Nozzles, Design

Kunin, T. I. and Vlasyuk, M. A.
THE USE OF VIBRATING MILL FOR THE PRODUCTION OF RONCALITE (Primenenie Vibromel'nitsy dlya Proizvodstva Rongalita). [1962] [8]p. (foreign text included) 13 refs.
Order from OTS or SLA $1.10 62-20237

Trans. of Izv[estiya] Vysshikh Uchebn[ykh] Zavedenii. Khim[iya] i Khim[icheskaya] Tekhnol[ogiya] (USSR) 1961 [v. 4] no. 4, p. 636-638.

DESCRIPTORS: *Sulfites, Decomposition, Chemical reactions, Reaction kinetics, Vibrators (Mechanical), Production.

It has been established that metallic iron has no effect on the reduction rate of sodium bisulfite by zinc powder in the case of operating conditions of equipment such as kettles with agitators. Production of rongalite in a vibrating mill with zinc balls increases the reaction rate and the degree of utilization of raw materials (in comparison with ordinary equipment containing agitators). (Author)

Lebedeva, G. N. and Gol'dvasser, G. L.
PRINCIPLES IN THE DESIGN OF APPARATUS FOR THE PRODUCTION OF MACROCRYSTALLINE AMMONIUM SULFATE. [1963] 9p.
Order from ATS $10.00 ATS-56Q69R

Trans. of #Koks i Khim[iya] (USSR) 1960, no. 10, p. 42-46.

DESCRIPTORS: *Sulfates, *Ammonium compounds, *Crystals, Industrial equipment, Design.

Lengauer, D.
CONCERNING THE MANUFACTURE OF A NEW TYPE OF POTASSIUM RAW MATERIAL INTO POTASSIUM CHLORIDE, POTASSIUM MAGNESIUM SULFATE AND POTASSIUM SULFATE. [1963] 43p. 16 refs.
Order from OTS or SLA $4.60 63-14645

Trans. of [Akademiya Nauk SSSR. Sektor Fiziko-Khimicheskogo Analiza. Izvestiya] 1941, v. 14, p. 411-430.

DESCRIPTORS: *Potassium compounds, Magnesium compounds, Chlorides, Sulfates, Manufacturing methods, Rock salt, Solvent action, Crystallization, Decomposition, Fertilizers.

The possibility is demonstrated of reprocessing of a new type of potassium raw material into products used as potassium fertilizers. The general course of the operations completely corresponds to the methods for the reprocessing of potassium salts. The possibility is also created for obtaining sodium sulfate by cooling an appropriate mixture of the langbeinite brines and the brines obtained after the washing out of the rock salt. (Author)

Lesniewicz, L., Piskorski, J. and others.
ESSAIS SÉMI-INDUSTRIELS DE DÉSHYDRATATION DU SEL DE GLAUBER PAR LE BRULEUR IMMERGÉ. EXPÉRIENCES À L'ÉCHELLE SÉMI-INDUSTRIELLE CONCERNANT LA DÉSHYDRATATION DU SEL DE GLAUBER À L'AIDE D'UN BRULEUR IMMERGÉ (Pilot-plant Experiments for Dehydration of Glauber Salt by Submerged Combustion). 17p. 4 refs.
Order from OTS, ETC or CNRS $0.80 62-26989

Trans. in French of Przemysl Chemiczny (Poland) 1957, v. 13[36], no. 12, p. 717-720.

DESCRIPTORS: *Sodium compounds, *Sulfates, Dehydration, Combustion.

Liander, H.
CONCERNING THE ALKALI LOSSES IN THE SODA HOUSE OF SULFATE FACTORIES. [1963] [10]p. 10 refs.
Order from SLA $1.10 63-14079

Trans. of Svensk Pappers-tidning, 1938 [v. 41] p. 267-271.

DESCRIPTORS: *Paper industry, *Sulfate pulp, *Wastes (Industrial), *Sodium compounds, Carbonates, Sulfates, Chlorides, Hydroxides, Vaporization, Condensation, Electric filters.

Moriga, Shigetaro.
SEPARATING METHOD OF THE PRODUCTS IN SYNTHETIC PROCESS OF MELAMINE BY HIGH PRESSURE PROCESS. July 63, 3p. (fig. omitted).
Order from SA $16.00 SA Code-P-130

Trans. of published Japanese patent 330/1955, cl. 16-E-47, appl. no. 11441/1953 filed 25 June 53, pub. 24 Jan 55, by Sumitomo Kagaku Kogyo Co., Ltd.

DESCRIPTORS: *Melamine, Synthesis (Chemistry), Gases, Ammonia, Carbon dioxide, Separation, *Towers (Chemistry)

Moroz, L. I.
MECANIZACION Y AUTOMATIZACION DE LOS PRINCIPALES PROCESOS EN LA PRODUCCION DE CARBURO (Mekhanizatsiya i Avtomatizatsiya Osnovnykh Protsessov Karbidnogo Proizvodstva) (Mechanisation and Automation of the Main Carbide Manufacturing Processes). 20p. CID: 62-243.
Order from OTS, ETC or CID $0.80 62-29243

Trans. in Spanish of Mekhanizatsiya i Avtomatizatsiya Proizvodstva (USSR) 1961, v. 15, no. 7, p. 48-51.

DESCRIPTORS: *Automation, Production, *Carbides.

Nakanishi, Yoshiharu, Takehisa, Yoshio and others.
POLYMERIZATION APPARATUS. July 63, 6p. (figs. omitted).
Order from SA $16.00 SA Code-P-148

Trans. of published Japanese patent 17698/1962, cl. 26-D-6 (13-A-5) (26-A-1) appl. no. 45613/1960 filed 21 Nov 60, pub. 29 Oct 62, by Toyo Rayon Co.

DESCRIPTORS: *Polymerization, *Towers (Chemistry), Design

Nessler, Friedrich.
PROCESS FOR SEPARATION OF ALKALI-METAL NITRATE AND AMMONIUM CHLORIDE SALT MIXTURES OBTAINED BY REACTION OF ALKALI-METAL CHLORIDE AND AMMONIUM NITRATE. [1963] 4p.
Order from OTS or SLA $1.10 63-14525

Trans. of German patent 605,746, appl. 24 Mar 33, announced 1 Nov 34, issued 20 Mar 35 (addition to main patent 567 884 issued (applied for) 24 May 30).

DESCRIPTORS: *Alkali metal compounds, *Nitrates, *Ammonium radicals, *Chlorides, Substitution reactions, *Flotation, Separation, Oils.

Plit, I. G.
INVESTIGATION OF DISPERSE ATOMIZATION IN NOZZLES OPERTAING ON THE PRINCIPLE OF THE BILATERAL WASHING OF A LIQUID SURFACE WITH GAS. 15 May 63 [21]p. 5 refs. FTD-TT-63-290.
Order from OTS or SLA $2.60 63-23199

Unedited rough draft trans. of #Zhurnal Prikladnoi Khimii (USSR) 1962, v. 35, no. 9, p. 1996-2007.

DESCRIPTORS: *Atomization, Sprays, *Nozzles, Design, *Spray nozzles, Liquids, Gas flow, Pneumatic devices, Hydrodynamics, Equations, Numerical analysis, Towers, (Chemistry).

When investigating the influence of the basic parameters on the dispersity of a spray of liquids in low-pressure pneumatic nozzles, it was established that there are two characteristic regions, depending on atomization conditions, in which the mean drop diameter changes according to various regularities. Generalized equations were obtained for each indicated region for determining the "critical" point of transition from one dependence to the other. (Author)

Rysakov, M. V., Agafonov, A. V. and others.
HYDROFINING DIESEL FUEL AT SUBSTANTIALLY REDUCED HYDROGEN CONSUMPTION. July 63, 4p. 6 refs.
Order from ICE in v. 3, no. 3, $15.00/year

Trans. of Khim[iya] i Tekh[nologiya] Topliv i Masel (USSR) 1963 [v. 8] no. 3, p. 7-[10].

DESCRIPTORS: Chemical engineering, *Fuel oil, *Hydrogenation, Sulfur, Catalysts, Aluminum, Cobalt, Molybdenum, Hydrogen.

Sakamoto, Fukuichi and Kiriyama, Sachio.
HYDRAULIC AUTOCLAVE FOR MANUFACTURING MELAMINE. July 63, 3p. (figs. omitted) 1 ref.
Order from SA $16.00 SA Code-P-129

Trans. of published Japanese patent 975/1953, cl. 13-A-52 (16-E-47) appl. no. 7901/1951 filed 16 June 51, pub. 9 Mar 53, by Ibigawa Denki Kogyo Co., Ltd.

DESCRIPTORS: *Melamine, Manufacturing methods, *Hydraulic presses, *Pressure vessels, Design

Shakin, A. N. and Fleishman, L. E.
EXPERIENCIAS DE LA PUESTA EN MARCHA DE LA SECCION DE SEPARADORES DE LA FABRICA DE AZUCAR DE ELANKOLENOVSKI (Uchest' Opyt Osvoeniya Separatsionnogo Tsekha Elan'-Kolenovskogo Sakharnogo Zavoda) (On stream Experiences in the Separator Section of the Elankolenovski Sugar Plant). 17p.
CID: 62-232.
Order from OTS, ETC or CID $0.80 62-29232

Trans. in Spanish of Sakharnaya Promyshlennost' (USSR) 1957, v. 31, no. 2, p. 5-10.

DESCRIPTORS: Industrial plants, Separation, *Carbohydrates.

Shchegolev, V. N.
AUMENTO DEL RENDIMIENTO DE LOS EVAPORADORES (Uvelichenie Proizvoditel'nosti Vyparnykh Apparatov) (Increase in Evaporator Yields). 19p.
CID: 62-287.
Order from OTS, ETC or CID: $0.80 62-29287

Trans. in Spanish of Sakharnaya Promyshlennost' (USSR) 1957, v. 31, no. 1, p. 21-27.

DESCRIPTORS: *Evaporators.

Stepanenko, I.
INVESTIGACION DEL PROCESO DE LA PRIMERA SATURACION EN UN ABSORBEDOR DE PULVERIZACION Y NUEVO METODO DE SUMINISTRO DEL GAS DE SATURACION (Issledovanie Protsessa 1 saturatsii v Orositel'nom Absorbere i Novyi Sposob Podachi Saturatsionnogo Gaza) (Research on the Primary Saturation Process in a Spray Absorber and Description of a New Saturation Gas Supply Method). 29p.
CID: 62-236.
Order from OTS, ETC or CID $1.07 62-29236

Trans. in Spanish of Sakharnaya Promyshlennost' (USSR) 1957 [v. 31] no. 4, p. 59-66.

DESCRIPTORS: *Gases, Sprays, *Absorption.

Syberg, Adolf.
PROCESS FOR THE MANUFACTURE OF A FERTILIZER. [1963] 6p.
Order from OTS or SLA $1.10 63-14530

Trans. of German patent 740, 335, by Humusdunger G. m. b. H and Adolf Syberg, patented 10 Nov 38, granted 26 Aug 43.

DESCRIPTORS: *Fertilizers, Manufacturing methods, Organic materials, Phosphates, Wastes (Sanitary Engineering), Fermentation.

Szolcsanyi, P.
DERIVATION OF EQUATIONS EXPRESSING THE REACTION KINETICS IN FLUIDIZED BED REACTORS. July 63, 4p. 7 refs.
Order from ICE in v. 3, no. 3, $15.00/year

Trans. of Magyar Kemiai Folyoirat (Hungary) 1961 [v. 67] no. 7, p. 320ff.

DESCRIPTORS: *Reaction kinetics, *Fluidized solids, Diffusion, Catalysts, Aluminum compounds, Silicates, Chemical engineering, Differential equations.

Terao, Shinichiro and Hinako, Tadashi.
METHOD OF MANUFACTURING AROMATIC NITRO COMPOUNDS. July 63, 8p. (figs. omitted).
Order from SA $19.00 SA Code-P-149

Trans. of published Japanese patent 12666/1962, cl. 1, 2 16-C-32, appl. no. 42522/1960 filed 18 Oct 60, pub. 1 Sep 62, by Sumitomo Kagaku Kogyo Co., Ltd.

DESCRIPTORS: *Nitrogen compounds, *Nitro radicals, *Benzene derivatives, Nitration, Manufacturing methods, Nitrobenzenes, Chlorides, Toluenes, *Towers (Chemistry), Design

Ullmann [F.].
SILICON COMPOUNDS. [1963] [17]p. 43 refs.
Order from SLA $1.60 63-14648

Trans. of mono. Enzyklopaedie der Technischen Chemie, v. 9, 2d ed., n.p., 1932, p. 508-513.

DESCRIPTORS: *Silicon compounds, Physical properties, Chemical properties, Production, Quartz, *Silicic acids, Colloids, Gels.

Vakhrushev, I. A. and Erokhin, G. S.
THE MIXING OF SOLID PARTICLES IN A FLUIDIZED BED. July 63, 6p. 10 refs.
Order from ICE in v. 3, no. 3, $15.00/year

Trans. of Khimicheskaya Promyshlennost' (USSR) 1962, no. 11 [p. 810-814].

DESCRIPTORS: Chemical engineering, *Fluidized solids, Heat transfer, Catalysts, Mixtures, Hydrocarbons, Decomposition, Laboratory equipment, Design.

Vol'f, F. F. and Yamlov, V. S.
STUDY OF THE CONDITIONS FOR THE CHEMICAL TREATMENT OF THE POTASH SALTS OF THE SOLIKAMSK DEPOSITS. ARTICLE 1. THE QUESTION OF THE TREATMENT OF THE SOLIKAMSK SYLVINITE. [1963] 18p. 4 refs.
Order from OTS or SLA $1.60 63-14608

Trans. of [Khimicheskaya Promyshlennost'] (USSR) 1927, v. 4, p. 485-489.

DESCRIPTORS: *Sodium compounds, *Potassium compounds, *Chlorides, Solubility, Black liquor, Crystallization, Manufacturing methods, Chemical engineering, Rock salt.

Waksmundzki, A. and Sczcypa, J.
THE INFLUENCE OF THE ADDITION OF HYDROCARBONS OF VARIOUS CHAIN LENGTHS ON THE FLOTATION OF PHOSPHORITES. [1963] 8p. (figs. omitted) 8 refs.
Order from SLA $1.10 63-16187

Trans. of Przemysl Chemiczny (Poland) 1957, v. 13[36] p. 721-723.

DESCRIPTORS: *Phosphorites, *Flotation (Separation), Hydrocarbons, Oleic acids, Benzenes.

The influence of a series of hydrocarbons on the flotation of phosphorites was studied. The hydrocarbons were employed in the form of mixed collectors: oleic acid-hydrocarbon. The evaluation of the flotation ability of the mixed collectors was carried out by direct flotation of the phosphorites in the laboratory flotation arrangement under the optimal flotation conditions at employment of the collectors in the form of emulsions. The results of the measurements are presented in the form of curves. On the basis of the obtained results it is found that the flotation ability of the phosphorite depends on the concentration of the hydrocarbon occurring in the mixed collector and is closely connected with the chain length of the hydrocarbon. Like a lengthening of the chain so also an increasing concentration of the hydrocarbon has a supplementary influence on lowering the expenditure of collector and hence on the flotation ability of the phosphorite. At this a certain regularity was observed: a twofold lengthening of the hydrocarbon chain brings about approximately a twofold increase in the flotation ability; increased concentration of the hydrocarbon acted analogously in this respect. This regularity also occurs with respect to the yield of P_2O_5 for aliphatic hydrocarbons. Benzene behaves differently under these conditions. (Author)

Yagisawa and Hayashi.
RÉCUPÉRATION DU SO2 CONTENU DANS LES DÉCHETS GAZEUX À L'AIDE D'UN ÉPURATEUR À VENTILATION DANS UNE USINE DE FABRICATION D'ACIDE SULFURIQUE UTILISANT LE PROCÉDÉ DE CONTACT (Recovery of Sulfur Trioxide from Tail Gas in a Contact Sulfuric Acid Plant by Venturi Scrubber). 14p. 7 refs. FX-1173.
Order from OTS, ETC or CNRS $0.80 62-26470

Trans. in French of Ryusan (Japan) 1961, v. 14, no. 10, p. 17ff.

DESCRIPTORS: *Sulfuric acid, Production, *Sulfur compounds, *Dioxides, *Waste gases, Ammonium radicals, Sulfites, Sodium compounds.

Yasui, Giichi.
SEPARATING METHOD OF A MIXTURE OF METHYL ACETATE AND METHANOL. July 63, 3p. (fig. omitted).
Order from SA $16.00 SA Code-P-131

Trans. of published Japanese patent 1570/1953, cl. 13-B-22 (16-B-612) appl. no. 9707/1951 filed 25 July 51, pub. 15 Apr 53, by Nippon Gosei Kagaku Kogyo Chemical Co.

DESCRIPTORS: *Methanols, *Acetates, Methyl radicals, Mixtures, Separation, *Distilling plants

Zapadanskii, M. B.
INVESTIGATION ON THE USE OF DYES AS FLOTATION REAGENTS. [1963] 12p. 1 ref.
Order from OTS or SLA $1.60 63-14610

Trans. of Tsvetnye Met[ally] (USSR) 1947, v. 20, no. 2, p. 28-31.

DESCRIPTORS: *Dyes, *Flotation (Separation), *Reagents, Azo compounds, Hydroxides, Tests, Hydrogen ion concentration.

Civil Engineering

MATERIALS EXAMINATION INSTITUTE OF SERBIA. 12 July 63, 4p. JPRS: 20151.
Order from OTS $0.50 63-31271

Trans. of Izgradnja (Yugoslavia) 1963 [v. 17] no. 1, p. 50-51.

DESCRIPTORS: *Civil engineering, *Materials, Concrete, Cements, Foundations (Structures), Bituminous coatings, Asphalt, Roads, *Construction.

An explanation of the tasks carried out in the twelve professional sections, of the Materials Examination Institute is given, which include the corresponding laboratories and instruments.

Meischeider, Herbert.
THE BEARING CAPACITY OF SPREAD FOUNDATIONS ON SANDY SOILS AND THE SECURITY FACTOR OF SPREAD FOUNDATIONS (O Nosivosti Obicnih Fundiranja na Peskovitom Tlu i Koeficijent Sigurnosti pri Obicnom Fundiranju). 1963, 8p. PL-480 Agr.
Order from OTS $0.50 60-21706

Trans. of Jugoslavenko Drustvo za Mehaniku Tla i Fundiranje. Proceedings. Comptes Rendus, 1954, no. 1/9, p. 27-30.

DESCRIPTORS: *Soil mechanics, Sand, Foundations (Structures), *Load distribution, Creep.

Electrical and Electronic Engineering

LARGE ELECTRICAL EQUIPMENT. 1. DISCUSSION ON THE COMMUNICATION OF MR. J. FABRE "THE LAWS OF DEGRADATION OF OIL IMPREGNATED PAPER IN TRANSFORMERS". [1963] 15p. 3 refs.
Order from SLA $1.60 63-16702

Trans. of Société Française des Électriciens. Bulletin, 1960, ser. 8, v. 1, no. 5, p. 269-277.

DESCRIPTORS: *Transformers, *Electric insulation, Paper, Oils, Impregnation, Oxygen, Temperature.

METHOD FOR THE COMPENSATION OF TEMPERATURE EFFECTS ON THE ELECTRICAL CHARACTERISTICS OF CIRCUIT ELEMENTS. 8 Feb 47, 2p.
Order from OTS or SLA $1.10 62-20269

Trans. of German patent application L 90, 419, VIII c/21g (reg. 767) appl. 20 May 46, by C. Lorenz, A.G.

DESCRIPTORS: Temperature, *Electrical equipment, *Capacitors, Dietectric properties, *Circuits.

Bal'chitis, A. A.
A CAPACITANCE D-C GENERATOR OPERATING ON A NEW PRINCIPLE. 27 Mar 63 [19]p. 2 refs.
FTD-TT-61-539. AD-401 585
Order from OTS or SLA $1.60 63-19190

Unedited rough draft trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Elektromekhanika (USSR) 1959, no. 10, p. 35-43.

DESCRIPTORS: *Capacitance, Direct current, *Generators, Design, Energy conversion, Electrical engineering, Power equipment, Electrostatic generators.

A capacitance machine operating on a new principle, based on the induction of a current in a conductor moving in an electric field according to the law of current induction, permits the development of new type machine and in particular a d-c machine. A feature of this machine is the simplicity of construction, since there is no commutator in this machine. This article is limited to the consideration of a d-c capacitance generator with independent excitation from an external source. However, by filling the operating gap of the machine (or part of it) with an electret the machine should acquire the ability to become self-excited and, analogously to induction machines, can be built for a circuit of parallel, series, or mixed excitation. (Author)

Behling, Hans.
INPUT CIRCUIT AND IF AMPLIFIER OF A 24-CHANNEL PULSE-PHASE-MODULATION SYSTEM (Eingangsschaltung und ZF-Verstärker einer 24-Kanal-Anlage mit Impulsphasen modulation). [1963] [37]p. (foreign text included) 14 refs.
Order from SLA $3.60 63-14431

Trans. of [NTZ; Nachrichtentechnische Zeitschrift] (West Germany) 1952 [v. 5] no. 11, p. 502-511.

DESCRIPTORS: *Intermediate frequency amplifiers, Amplifiers, *Circuits, *Pulse modulation, Transformers, Band-pass filters, Discriminators, Design, Construction, *Phase modulation, Multiplex.

This report deals with general aspects for the development of an input circuit and an IF amplifier for a 24-channel pulse-phase-modulation system. Practical construction of the amplifier is described; pertinent data and curves are included. (Author)

Bunimovich, V. I.
RECTANGULAR RESONATORS AS WAVE-METERS FOR DECIMETER AND CENTIMETER WAVES. [1963] [15]p. (1 fig. omitted) 6 refs.
Order from OTS or SLA $1.60 63-14699

Trans. of [Zhurnal Tekhnicheskoi Fiziki] (USSR) [1940] v. 10, no. 8 [p. 633-639].

DESCRIPTORS: *Resonators, *Frequency meters, *Measuring devices (Electrical and Electronic), Electromagnetic waves, Design, Construction.

Euler, J.
UNUSUAL METHODS FOR PRODUCING CURRENTS. 17 Jan 63, [17]p. 26 refs.
Order from SLA $1.60 63-16407

Trans. of Chem[ie]-Ing[enieur]-Technik] (West Germany) 1962, v. 34, p. 567-571.

DESCRIPTORS: *Electric power production, Cesium, Vapors, Generators, Electrolytic cells, Sodium compounds, Mercury alloys, Thermoelectricity, Ferroelectricity, Electricity.

In addition to the much discussed thermionic and thermoelectric devices, fuel cells, magnetohydrodynamic generators, etc., there are a number of other, little known processes for the production of electrical energy. Some of these have been discussed. The best technical prospects are probably offered by the cesium vapor generator. The amalgam distillation according to Ruben rests on a similar basis. Surprisingly high electrokinetic voltages are obtained by flowing through porous diaphragms, when poorly conducting liquids with high dielectric constants, e.g., acid amides, are used, under high pressure. Finally, chemical thermoelectric cells and ferroelectric generators could also definitely offer prospects of success. (Author)

Fradin, A. Z. and Ryzhkov, E. V.
PLOTTING THE DIAGRAM OF THE DIRECTIVITY OF ANTENNAS WITH THE AID OF AIRPLANES AND HELICOPTERS [AND] TABLE OF CONTENTS. 26 Mar 63 [14]p. FTD-TT-63-42. AD-402 465.
Order from OTS or SLA $1.60 63-19477

Unedited rough draft trans. of mono. Izmerenie Parametrov Antenno-Fidernykh Ustroistv (Measuring the Parameters of Antenna-Feeder Devices) Moscow, 1962, p. 266-272, 314-316.

DESCRIPTORS: *Antenna radiation patterns, Antennas, Measurement, Airplanes, Helicopters, *Antenna feeds, Direction finding.

Topics include: Transmitting device; receiving device; auxiliary antennas; and, instruments for tracking the flying craft.

Frank, H., Ladman, R., and Pribyl, F.
UN NOUVEAU TYPE DE PHOTORÉSISTANCE AU S Pb (Nory typ fotoelektrichiko odporu PbS) (A New Type of Lead Sulfide Photoelectric Resistor). 17p. 5 refs.
Order from OTS, ETC or CNRS $0.80 62-28084

Trans. in French of Slaboproudy Obzor (Czechoslovakia) 1955, v. 16, p. 269-273.

DESCRIPTORS: *Electron tubes, *Photoelectrons, Lead compounds, Measurement, Sulfides, *Resistors.

Goldstein, A.
DRYING AND VACUUM-IMPREGNATION OF HIGH-VOLTAGE TRANSFORMERS (Trocknung und Vakuumimprägnierung von Hochspannungstransiormatoren). [1963] [21]p. (foreign text included) 20 refs.
Order from SLA $2.60 63-14990

Trans. of [Schweizerischer Elektrotechnischer Verein]. Bull[etin] 1961, v. 52, no. 19, p. 757-764.

DESCRIPTORS: *Transformers, Electrical potential, Dehydration, *Electrical insulation, Dielectric properties, Oils, Impregnation, Degradation, Vacuum apparatus.

Topics include: Vacuum treatment gives better drying in less time; oil impregnation under vacuum for maximum outgassing of transformer insulation; ageing of insulating oil and methods of restoring efficiency; and increase in the life of insulating oil through vacuum preparation.

Gorin [B.] Sh. and Spivak, P. U.
ELEVATION AND ALTITUDE INDICATORS. 11 Apr 63 [18]p. FTD-TT-63-277.
Order from OTS or SLA $1.60 63-19465

Unedited rough draft trans. of mono. Indikatory Napravleniya (Bearing Indicators) Moscow, 1960, p. 61-73.

DESCRIPTORS: *Height finding, *Antenna radiation patterns, *Goniometers, Design, Operation, Azimuth, Targets, Detection.

Topics include: Measurement of elevation with the aid of a goniometer vertical antenna radiation pattern, elevation indicator with goniometer; and, altitude indicator of a V-beam radar.

Horst, Hans Albrecht; Johann, Hans Heinrich, and Schulze-Buxloh, Walter.
PROTECTION OF SILICON RECTIFIERS IN ELECTROPLATING INSTALLATIONS. [1963] 20p. (figs. omitted) 10 refs.
Order from SLA $1.60 63-14421

Trans. of ETZ Elektrotechnische Zeitschrift. [Ausgabe] B. [der Elektrotechniker] (West Germany) 1961 [v. 13] no. 12, p. 334-338.

DESCRIPTORS: *Silicon, *Crystal rectifiers, *Electroplating, Fuzes (Electrical), Reliability.

Despite the greater reliability of silicon rectifiers used for supplying current to electroplating plants, provision must be made against several types of breakdown. The possible types of breakdown are enumerated. It was shown that the special characteristics and operating conditions of silicon rectifiers require new types of protective devices having an exceptionally rapid response period. A description is given of a special fuse with a heating value ($\int i^2 dt$) matched to the silicon cell and having an almost unlimited switch-out load capacity at the lower blocking voltages. (Author)

Job, F. and Toutan, M.
GENERAL PRINCIPLES OF CONSTRUCTION AND OPERATION OF THE 12.5Mc/s TRANSMISSION SYSTEM. [1963] 12p. 4 refs.
Order from SLA $1.60 63-18029

Trans. of Câbles et Transmission (France) 1962, v. 16A, no. 3, p. 143-147.

DESCRIPTORS: *Transmission lines, *Coaxial cables, High frequency, Construction, Operation, Wave transmission, Filters (Electromagnetic wave), Electron tubes.

An account was given of the general principles of construction and operation of the 12.5Mc/s transmission system on 2 6/9.5 mm. coaxial cables, comparing them to those used in the 4 Mc/s system and showing how advantage had been taken of the experience of operating the latter system for ten years. The knowledge gained has especially facilitated the investigation of modifications and maintenance of equipment, including the creation of new transfer filters; improved inspection of electronic tubes; perfection of devices for regulation, correction, equalization and supply; and the new manufacture of parts. (Author)

Kalganov, A. F. and Polotovskii, L. S.
DISCUSSION OF THE ARTICLE "CAPACITANCE D-C GENERATOR OPERATING ON A NEW PRINCIPLE". 27 Mar 63 [15]p. 16 refs. FTD-TT-61-540. AD-401 586.
Order from OTS or SLA $1.60 63-19189

Unedited rough draft trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Elektromekhanika (USSR) 1960 [v. 3] no. 4, p. 129-133.

DESCRIPTORS: *Capacitance, Direct current, *Generators, Electrostatic generators, Electrical engineering, Power equipment.

(See also 63-19190)

Kaluzhnikov, N. A.
PARA EL CALCULO DE UN CIRCUITO DE CORRIENTE ALTERNA EN UN AMPLIFICADOR MAGNETICO (K Raschetu Tsepi Peremennogo Toka Magnitnogo Usilitelya) (Calculation of an a.c. Circuit in a Magnetic Amplifier). 25p. 3 refs. CID: 62-261.
Order from OTS, ETC or CID $0.95 62-29261

Trans. in Spanish of #Avtomatika i Telemekhanika (USSR) 1957, v. 18, no. 9, p. 792-801.

DESCRIPTORS: Determination, *Alternating current, Circuit, *Magnetic amplifiers.

Kamenskii, E. I.
NUEVOS PARAMETROS DE CUARZOS Y METODO TECNICO PARA EL CALCULO DE CUARZOS DE AUTOGENERADORES (Novye Parametry Kvartsev i Inzhenernyi Metod Rascheta Kvartsevykh Avtogeneratorov) (New Quartz Parameters and Technical Method Employed in the Determination of Autogenerator Quartzes). 38p. 6 refs. CID: 62-297.
Order from OTS, ETC or CID $1.54 62-29297

Trans. in Spanish of #Akademiya Nauk SSSR. Izvestiya. Seriya Fizicheskaya, 1956 [v. 20] no. 2, p. 237-250.

DESCRIPTORS: Determination, *Quartz capacitors, Generators.

Koppelman, Floris.
THE QUESTION OF SOLVING THE SWITCHING PROBLEM IN CURRENT CONVERSION AND THE PRINCIPLES WHICH LED TO THE USE OF PRESSURE CONTACTS IN THE "K" CONVERTER. [1963] 42p. (figs. omitted).
Order from SLA $4.60 63-14575

Trans. of [ETZ] Elektrotechnische Zeitschrift. [Ausgabe A. Zentralblatt für Elektrotechnik] (Germany) 1941, v. 62, no. 1, p. 3-16.

DESCRIPTORS: *Power equipment, Switching circuits, *Pressure switches, *Coils, Alternating current, Direct current.

The "K" converter, described here for the first time, serves the purpose of converting three-phase voltage into direct current voltage. It is a synchronous apparatus with pressure contacts which are relieved of all switch arcing by means of saturated choke coils and are therefore durable. A consequence of the purely metallic current path is low material requirement and low loss. Judging from operating experience, already extending over several years, the "K" converter seems destined to replace converters and rectifiers (from low to very high capacity) at present in use, in such industries as require high efficiency. (Author)

Kuchinskii, G. S. and Kaplan, D. A.
PERMISSIBLE FIELD POTENTIALS FOR PAPER-OIL INSULATION OF APPARATUS OPERATING IN D. C. TRANSMISSION LINES (Dopuskaemye Napryazhennosti dlya Bumazhno-Maslyanoi Izolyatsii Apparatov, Rabotayushchikh v Zlektroperedachakh Postoyannogo Toka). [1963] [19]p. (foreing text included) 3 refs.
Order from OTS or SLA $1.60 63-14929

Trans. of Elektrichestvo (USSR) 1961, no. 5, p. 64-68.

DESCRIPTORS: *Electric insulation, Direct current, *Transmission lines, *Electric potential, Ionization, Electric equipment, *Paper, *Oils, Transformers,

The permissible operating voltage in the case of d.c. can be selected on the basis of the ionization characteristics. Thereby, the intensity of the ionization processes should not exceed the intensity of the initial stage of unstable ionization under a.c. conditions ($1\text{-}5 \times 10^{-9}$ Coulomb/sec). For the pertaining relations of the acting voltages in d.c. transmission lines the radial and longitudinal dimensions of the insulation of apparatus is determined by the over-voltages, i.e. by the test voltages corresponding to these over-voltages. (Author)

Kurylev, E. S., Golyand, M. M. and others.
A MULTI-POINT TEMPERATURE REGULATOR WITH SEMICONDUCTOR ELEMENTS (Mnogotochechnyi Regulyator Temperatury na Poluprovodnikovykh Elementakh) tr. by P. Thistlethwaite. [1962] [15]p. (foreign text included) 2 refs. [CSIRO Trans.] 5968.
Order from OTS or SLA $1.60 63-13238

Trans. of Kholodil'naya Tekhnika (USSR) 1962 [v. 39] no. 1, p. 4-7.

DESCRIPTORS: *Thermostats, *Thermometers, *Semiconductor devices, *Temperature control, Refrigeration systems.

The regulator is a multi-point semiconductor control unit for automatic regulation of air temperature in chambers. A semiconducting resistance thermometer is the sensitive temperature measuring element of the unit. The amplifier has semiconductor and magnetic elements. The temperature in the chambers is measured by an electronic bridge. This instrument also produces an automatic record of the temperature simultaneously in any 12 chambers under the control of the operator. The measurement and recording of temperature is accomplished simultaneously with its regulation. Details of design, construction, and operation are given.

Mobius, H. H.
HIGH-TEMPERATURE ELECTRODES FOR SOLID-ELECTROLYTE GALVANIC CELLS, PARTICULARLY FOR FUEL CELLS. [26 Mar 63] 3p.
Order from OTS or SLA $1.10 63-16421

Trans. of East German patent 22,030, issued 10 Oct 61, filed 20 May 58.
Another trans. is available from TTIS $6.00 as TTIS-NS-65, 1963.

DESCRIPTORS: *Batteries and components, *Fuel cells, *Electrodes, Heat-resistant materials, *Zirconium compounds, *Thorium compounds, Lanthanum compounds, Neodymium compounds, Cerium compounds, Praseodymium compounds, Sintering.

High-temperature electrodes for solid-electrolyte galvanic cells are described. The electrode is constructed of substances structurally similar or identical to the solid electrolyte, with admixture of electron-conducting materials, and is completely sintered to the solid electrolyte. Both the electrode and solid electrolyte can contain zirconium or thorium oxide as matrix, with additions of lanthanum, neodymium, or similar oxides. To the electrode, there may also be added cerium oxide or praseodymium oxide or a similar oxide causing the conduction of electrons.

Müller, Otto and Roth, Hans.
CONTACT MECHANISM OF SNAP SWITCH. July 63, 3p. (figs. omitted).
Order from SA $16.00 SA Code-P-128

Trans. of published Japanese patent 3482/1957, cl. 59-A-51, appl. no. 6951/1955 filed 5 Mar 55, pub. 8 June 57, by Siemens-Schuckert Werke Aktiengesellschaft, West Germany.

DESCRIPTORS: *Switches, *Electric switches, Design, Electric connectors, Electric insulation

Nose, Yasuo and Takeishi, Tatsuhiko.
SEMICONDUCTOR DEVICE OF NEGATIVE RESISTANCE CHARACTERISTIC. [1963] 5p. (figs. omitted).
Order from OTS or SLA $1.10 63-16445

Trans. of Japanese patent publication SHO 37-16,058, 9 Oct 62 appl. SHO 33-18610, 3 July 58, by Oki Denki Kogyo Co.
Another trans. (main claims, including drawings) is available from WBI $2.00, Nov 62.

DESCRIPTORS: *Semiconductor devices, Single crystals, Rods, Dielectrics, *Germanium, Negative resistance circuits, Electrical properties.

The invention concerns a semiconductor device of a negative resistance characteristic wherein there are provided an intrinsic or almost intrinsic high specific-resistance semiconductor rod, two electrodes which are made of a dielectric-type semiconductor having lower specific resistance than said semiconductor rod and which are located at both ends of the rod, and the third electrode positioned on the semiconductor rod with its small dielectric-type semiconductor region placed on another small semiconductor region of the opposite dielectric-type, as detailed in the foregoing description of the invention. (Author)

Prozorov, V. A.
CHARACTERISTICS AND DETAILS OF REGULATION SCHEMES OF A. C. ELECTRIC DRIVES WITH COMMUTATOR GENERATORS. [1962] 12p. 6 refs.
Order from RIS $25.00 RIS E-771

Trans. of [Vestnik Elektropromyshlennosti] (USSR) 1960 [v. 31] no. 9, p. 41-47.

DESCRIPTORS: Alternating current, *Electromagnetic drives, *Commutators, *Motor generators, Electric motors, *Electric governors, Speed regulators.

Reiplinger, E.
POSSIBILITIES FOR FURTHER NOISE REDUCTION IN POWER TRANSFORMERS (Möglichkeiten Weiterer Geräuschbekämpfung bei Grosstransformatoren).
20 May 60 [22]p. (foreign text included) 1 ref.
Order from SLA $2.60 63-16701

Trans. of ETZ [Elektrotechnische Zeitschrift. Ausgabe] A. [Zentralblatt für Elektrotechnik (West Germany) 1960, v. 81, no. 3, p. 102-108.

DESCRIPTORS: *Power transformers, *Noise, *Magnetostriction, Magnetic cores, Steel, Hot-working, Cold-working, *Acoustic insulation.

The source of transformer noise lies in magnetostriction of the core. Results of magnetostriction tests on hot and cold rolled steel are reported. Possibilities for noise reduction are described. Cores having cooling slots can be influenced by several db by acoustic and magnetic coupling of the different core members. Examples of various noise barrier-walls attached to the tank are described, having a high degree of damping action. (Author)

Rudneva, A. V.
ON THE QUESTION OF RATIONAL DISTRIBUTION OF GLAZE RIGS IN THE USSR (K Voprosu Ratsional'nogo Razmeshcheniya Gololednykh Stankov na Territorii SSSR). 19 Mar 63 [11]p. 5 refs. AID rept. T-63-37.
Order from OTS or SLA $1.60 63-19031

Trans. of Glavnaya Geofizicheskaya Observatoriya, Leningrad. Trudy (USSR) 1961, no. 122[184] p. 68-74.

DESCRIPTORS: *Ice formation indicators, *Transmission lines, Ice, Snow, Terrain, Meteorology, Distribution.

An investigation was made of the geographic distribution of ice and glaze on overhead transmission lines, and of the effective distribution of ice formation indicators. Analyses were made of instrumental and visual data on ice deposits on wires for the period 1950 to 1960. It was shown that the frequency and intensity of ice formation depend on the type of relief, and distribution of ice formation indicators must be made accordingly. In Belorussia, the most effective distance between ice formation indicators was found to be about 70km. In mountains there exist especially complex conditions for ice formation; for example, in the Kola Peninsula, the zone of maximum ice frequency is found at elevations between 400 and 500m, in the Crimean mountains, the maximum lies at about 1200m along the southern slopes. Generalizations can be made about the effective radius of ice formation indicators only under given terrain conditions.

Sadovskii, A. S.
APARATO REGISTRADOR INDUCTIVO DE ELEVADA SENSIBILIDAD PARA REGISTRAR MOVIMIENTOS LINEALES Y ANGULARES (Induktivnyi Datchik Povyshennoi Chuvstvitel'nosti dlya Registratsii Lineinykh i Uglovykh Peremeshchenii) (High Sensitivity Inductive Recording Apparatus Employed in Linear and Angular Movement Recordings). 29p. 4 refs. CID: 62-260.
Order from OTS, ETC or CID $1.07 62-29260

Trans. in Spanish of #Avtomatika i Telemekhanika (USSR) 1957, v. 18, no. 9, p. 802-813.

DESCRIPTORS: *Recording systems.

Savel'ev, V. P., Shmatovich, V. V. and others.
COMBINED MAGNETIC-VALVE ARRESTOR FOR A VOLTAGE OF 500 kV (Kombinirovannyi Magnitno-Ventil'nyi Razryalnik na Napryazhenie 500 KV).
25 July 60 [29]p. (foreign text included) 6 refs.
Order from OTS or SLA $2.60 63-14930

Trans. of Elektrichestvo (USSR) 1961, no. 4, p. 13-20. Another trans. is available from OTS or SLA $1.60 as 62-19129, DSIR NLL M. 4672 [1961] [11]p.

DESCRIPTORS: *Lightning arrestors, *Switching circuits, *Electric potential, Transmission lines, Electrical equipment, Valves, Magnetic properties.

Smirnov, G. V.
CORRECTOR FOR COMPOUNDING SYSTEM, tr. by L. Gradasoff. July 62 [8]p. 1 ref.
Order from OTS or SLA $1.10 62-32775

Trans. of Nauchno-Issledovatel'skii Institut Postoyannogo Toka. Izvestiya (USSR) 1960, v. 6, p. 149-154.

DESCRIPTORS: *Transmission lines, Attenuation, Distortion, Corrections, Electrical equipment.

To insure a stable and economic performance of inverter on d-c transmission, it is necessary to maintain automatically the magnitude of extinction agles of the valves. This article describes one of the several alternate designs of corrector whose purpose is to reset the angle of extinction when it departs from a predetermined value.

Tsuprikov, A.
CABLES TIPO PRVPA Y PTVZH EN LAS LINEAS SUBTERRANEAS (Kabeli PRVPA i PTVZH na Podzemnykh Liniyakh) (PRVPA and PTVZH Type Cables in Undergrounds Lines). 6p. CID: 62-289.
Order from OTS, ETC or CID $0.80 62-29289

Trans. in Spanish of Radio, Moscow (USSR) 1956, no. 10, p. 30.

DESCRIPTORS: *Electric cables.

Vales, Jaroslav, Kopecek, Jan, and Hrbek, Bohumil.
ANALOGUE OF A VHV TRANSFORMER WITH PACKED INSULATION AND ITS TESTING (Model Transformátor VVN s Balenou Izolaci a jeho Zkoušení).
[1963] 23p. (foreign text included) 8 refs.
Order from SLA $2.60 63-16703

Trans. of Elektrotechnicky Obzor (Czechoslovakia) 1960, v. 49, no. 7, p. 350-355.

DESCRIPTORS: *Power transformers, Design, Tests, Electric discharges, *Electric insulation,

Warnecke, R., Guenard, P., and Doehler, O.
BASIC PHENOMENA IN TRAVELING-WAVE TUBES. [1963] [32]p. (figs. refs. formulae omitted).
Order from SLA $3.60 63-14430

Trans. of l'Onde Electrique (France) 1954 [v. 34] no. 325, p. 323-338.

DESCRIPTORS: *Traveling-wave tubes, *Electron tubes, Circuits, Amplifiers, Oscillators, Electrical properties, Mechanical properties.

Ordnance, Missiles, and Satellite Vehicles

Bernsteins, N.
SCIENCE BREAKS INTO SPACE. 12 Mar 63 [6]p. FTD-TT-62-1858.
Order from OTS or SLA $1.10 63-19665

Unedited rough draft trans. from Cina (Latvian SSR) 1962, no. 190, 13 Aug, p. 4.

DESCRIPTORS: *Space flight, Spacecraft, Closed-cycle ecological systems, Algae, Satellites (Artificial), (Cybernetics, Recording systems, Space environmental conditions.

Dobrichovsky, Z.
ASTRONOMICAL OBSERVATORY IN SPACE. 24 July 62, 4p. AID rept. 62-107. AD-288 158
Order from OTS or SLA $1.10 63-19449

Abstract trans. of Veda a Technika Mladezi (Czechoslovakia) 1962, no. 9, p. 305-307.

DESCRIPTORS: Space stations, *Astronomical observatories, Satellites (Artificial), Design, *Scientific satellites.

The article describes the probable shape and arrangement of an orbiting observatory 10 to 12 m long and 4 m in diameter, designed to orbit the earth at an altitude of 800 km and a velocity of 28,000 km/hr. In the opinion of prominent Soviet scientists, the launching of such a vehicle could be realized in three or four years. (Author)

Illenko, M. I., Bratiychuk, M. V., and Shvalagin, I. V.
ESTIMATION OF ACCURACY OF RELATING THE MOMENT OF OBSERVATION TO THE PRECISE-TIME SIGNALS [AND] AN ESTIMATION OF THE ACCURACY OF ARTIFICIAL EARTH SATELLITE COORDINATES OBTAINED WITH A MOVING-FILM CAMERA. 11 July 63, 6p. 3 refs. JPRS: 20127.
Order from OTS $0.50 63-31260

Trans. of Byulleten' Stantsii Opticheskogo Nablyudeniya Iskusstvennykh Sputnikov Zemli (USSR) 1962, no. 25, p. 5-6, 13-15.

DESCRIPTORS: *Satellites (Artificial), *Time signals, Timing devices, *Position finding, *Motion picture cameras, Time-lag theory, Tracking.

Koifman, D. I.
EXPERIENCIA DE LA UTILIZACION DE CARGAS EXPLOSIVAS DE DIAMETRO SUPERIOR AL NORMAL (Opyt Primeneniya Zarydov Uvelichennogo Diametra) (Tests in the Utilisation of Explosives Charges of Larger than Normal Diameter). 12p. CID: 62-300.
Order from OTS, ETC or CID $0.80 62-29300

Trans. in Spanish of Ugol' (USSR) 1955, v. 30, no. 2, p. 41-42.

DESCRIPTORS: Tests, *Chargers (Explosive).

Kudrin, O. I.
SELECTING THE RELATIVE VALUE OF A CRITICAL CROSS SECTION OF A NOZZLE OF A LIQUID ROCKET ENGINE CHAMBER. 18 June 63 [16]p. 3 refs. FTD-TT-63-417.
Order from OTS or SLA $1.60 63-23439

Unedited rough draft trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Aviatsionnaya Tekhnika (USSR) 1958, no. 3, p. 78-88.

DESCRIPTORS: *Nozzles, *Rocket motor nozzles, *Combustion chambers, Rocket motors (Liquid propellant), Combustion, Effectiveness, Numerical analysis.

Muraour, Henri.
ON THE FORMATION OF EXPLOSIVE LEAD SALTS DURING THE MANUFACTURE OF "TNT" [Sur la Formation de Sels de Plomb Explosifs au Cours de la Fabrication de la Tolite]. 29 Mar 63, 4p.
Order from SLA $1.10 63-14891

Trans. of Memorial des Poudres (France) [1954, v. 36] p. 37-[39].

DESCRIPTORS: *TNT, Manufacturing methods, Impurities, *Explosive materials, *Lead compounds, Salts, Cleaning materials, *Sulfites.

Sanitation and Safety Engineering

CONTRIBUTIONS TO THE PROBLEMS OF EARTH-PRESSURE MEASUREMENT AND EARTH-MECHANICS AT POTASH AND ROCKSALT-MINING. [1963] 33p. (figs. omitted) 28 refs.
Order from SLA $3.60 63-16272

Trans. of Bergakademie (West Germany) 1960 [v. 12] no. 8, p. 440-453.

DESCRIPTORS: *Mining engineering, Potash, Rock salt, *Soil mechanics, Mechanical properties.

Derpa, A.
PIPELINES AND SANITATION OF GROUND WATERS Abstract of rept. presented at the International Technical Meeting for Water Sanitation of the PRO AQUA, Basel, 2 Oct 61, [1963] 5p.
Order from SLA $1.10 63-16315

Trans. of Textil Rundschau (Switzerland) 1962, v. 17, no. 4, p. 201-203.

Krygielova, W., Kucharski, J. and others.
TENTATIVES POUR RENDRE INOFFENSIVES LES EAUX USÉES DE LA PRODUCTION D'AURÉOMYCINE (Purification of Sewage from Aureomycin Manufacture). 9p. FX-1124.
Order from OTS, ETC or CNRS $0.80 62-26469

Trans. in French of Przemysl Chemiczny (Poland) 1961, v. [17](40) p. 341-344.

DESCRIPTORS: *Aureomycin, Production, Sewage, *Antibiotics, Water, *Contamination, Aerobiology.

Trueb, E. U.
SAFETY MEASURES FOR THE PREVENTING OIL LOSSES FROM ABOVE-GROUND AND UNDERGROUND RESERVOIRS. Abstract of rept. presented at the International Technical Meeting for Water Sanitation of the PRO AQUA, Basel, 2 Oct 61 [1963] 2p.
Order from SLA $1.10 63-16314

Trans. of Textil-Rundschau (Switzerland) 1962, v. 17, no. 4, p. 201.

DESCRIPTORS: *Storage tanks, *Oils, *Safety, Hydrology, Contamination, Water, Sanitary engineering.

Zimmermann, W.
THE DANGER OF THE POLLUTION OF SURFACE AND GROUNDWATERS BY MINERAL OILS. Abstract rept. presented at the International Technical Meeting for Water Sanitation of the PRO AQUA, Basel, 2 Oct 61. [1963] 2p.
Order from SLA $1.10 63-16313

Trans. of Textil Rundschau (Switzerland) 1962, v. 17, no. 4, p. 200.

DESCRIPTORS: *Hydrology, *Contamination, *Mineral oils, Surfaces, *Water, Sanitary engineering, Petroleum.

Ship Building

Bogolepov, I. I.
THE SOUND-INSULATING CAPABILITY OF SHIP HULL STRUCTURES. 24 July 63, 10p. 7 refs.
JPRS: 20319.
Order from OTS $0.50 63-31368

Trans. of Sudostroenie (USSR) 1963, v. 29, no. 4, p. 6-9.

DESCRIPTORS: *Ship hulls, *Acoustic insulation, Design, Acoustic properties.

The article examines the relationship of the sound-insulating capability of ship hull coverings to all of their basic parameters: mass, rigidity, internal friction, etc. The relationships and calculating methods derived enable the discovery of means for rational improvement of the sound-insulating capability of ship hull structures. (Author)

Churkin, A. and Geravker, L.
BOTADURA DE LOS BARCOS MEDIANTE APOYOS FLOTANTES (Spusk Sudov na Vodu pri Pomoshchi Plovuchei Opory) (Ship Launching with Floating Supports). 5p. CID: 62-295.
Order from OTS, ETC or CID $0.80 62-29295

Trans. in Spanish of Morskoi Flot (USSR) 1955, v. 15, no. 3, p. 31.

DESCRIPTORS: *Ships (Nonmilitary), Shipyards, Launching.

Danchenko, R.
A WINGED FAMILY. Mar 63 [7]p. (figs. omitted). RTS-2203.
Order from OTS or SLA $1.10 63-15951

Trans. of Dekorativnoe Iskusstvo SSSR, 1962, no. 6, p. 22-25.

DESCRIPTORS: *Ships (Nonmilitary), *Ship structural components, Design, *Hydrofoil boats, Velocity.

The exterior and interior design of three hydrofoil ships is described. Emphasis is given to the aesthetic qualities of the interior decorations, including materials used. The construction of the vessels is discussed from an engineering standpoint.

Hultbom, K. G.
HYDROFOIL FOR OUTBOARD-MOTOR BOATS, tr. by E. B. F. 16 May 63, 6p. (figs. omitted).
Order from OTS or SLA $1.10 63-19622

Trans. of Swedish patent 147, 473, cl. 65 f^1 :4/20, by AB Electrolux, appl. 6 July 50, granted 12 Aug 54, pub. 26 Oct 54.

DESCRIPTORS: *Hydrofoils, *Boats, Design.

The invention involves a hydrofoil for outboard-motor boats, consisting for example of a wing-shaped step or the like mounted about the propeller and arranged so that, as the boat moves forward, the relative motions caused by the propeller between the hydrofoil and the water, transmit a lifting force to the boat, characterized in that the hydrofoil is swingably secured on the outboard motor assembly and maintained in the plane of the propeller by means of a safety device, such as a shear pin or a catch which, upon the occurrence of an abnormally heavy stress, releases the hydrofoil, so that it can swing about its pivot, which is preferably mounted on an element extending aft from the motor gear housing, above the propeller. (Author)

Spektor, D.
AUTOELEVADOR PARA TRABAJOS EN LAS BODEGAS DE LOS BUQUES (Avtopogruzchik dlya Vnutrityumnykh Rabot) (Ship-hold Autoelevator). 12p. CID: 62-221.
Order from OTS, ETC or CID $0.80 62-29221

Trans. in Spanish of Morskoi Flot (USSR) 1958, v. 18, no. 7, p. 23-24.

DESCRIPTORS: *Hoists, Ships (Nonmilitary).

FOOD, HANDLING, AND PACKAGING EQUIPMENT

Schoppmeyer, W.
FRESH KEEPING PACKAGES. June 56, 14p.
Order from SLA $1.60 63-16491

Trans. of reprint from die Neue Verpackung (West Germany) 1952 [v. 5] no. 8.

DESCRIPTORS: *Containers, Storage, *Preservation, Paper, Foils, Seals, Food, Moisture, Microorganisms, Air, Odors, Light, Permeability.

Food

PROCESS FOR MAKING GLUTEN POWDER. [1963] 2p.
Order from OTS or SLA $1.10 63-14935

Trans. of Danish patent 56,828, cl. 2 c- 2, by A/S Niro Atomizer, pat. from 9 Dec 38, issued 9 Oct 39.

DESCRIPTORS: *Gluten, *Powders, *Flour, Wheat, Hydrogen ion concentration, Water.

PROCESS OF MANUFACTURE FOR GRANULAR TEA POWDER OR DUST. [1963] [3]p.
Order from OTS or SLA $1.10 63-14986

Trans. of German patent 636,560, cl. 53K, gr. 3, S 115429 IV a/53K, issued 12 Oct 36, pub. 24 Sep 36, by R. Seelig & Hille, pat. from 19 Sep 34.

DESCRIPTORS: *Tea, *Powders, Dusts, Binders, Carbohydrates.

PROCESS OF MANUFACTURE FOR GRANULAR TEA POWDER OR TEA DUST. [1963] [5]p.
Order from OTS or SLA $1.10 63-14983

Trans. of German patent 698,108, cl. 53d, gr. 7, S 137141, IV a/53d, issued 1 Nov 40, by R. Seelig & Hille, pat. from 23 May 39, pub. 3 Oct 40 (appended to patent 636,560, 23 May 39).

DESCRIPTORS: *Tea, *Powders, Dusts, Processing.

SPAR CHAINS: DISPLAYS LIKE MARILYN.
11 Jan 61 [30]p. (figs. omitted).
Order from SLA $2.60 63-16622

Trans. of der Spiegel (West Germany) 1960, v. 14, no. 47, p. 42-57.

DESCRIPTORS: *Food, *Commerce, *Distribution (Economics).

Aleman Hidalgo, Guillermo.
PROBLEMS OF RAW SUGAR MANUFACTURE FOR BULK HANDLING. [1963] 8p.
Order from SLA $1.10 63-16347

Trans. of Asoc[iacion de] Tec[nicos] Azucar[eros de Cuba]. Bol[etin] Ofic[ial] 1956, v. 15, p. 215-227.

DESCRIPTORS: *Carbohydrates, Handling, Crystallization, Polarization, Industrial production.

Baetsle, R.
FREEING CEREALS FROM GERMS [1963] 5p.
Order from SLA $1.10 63-16517

Trans. of die Müllerei (West Germany) 1957 [v. 10] no. 11, p. 23-24.

DESCRIPTORS: *Cereals, *Microorganisms, Flour, Contamination, *Germicides, *Purification, Food, Preservation.

Barnheim, Curt Michael.
PROCESS FOR THE PRODUCTION OF CEREAL STARCHES. [1963] 3p.
Order from OTS or SLA $1.10 63-14795

Trans. of German patent 961,250, cl. 89k, gr. 2, internat'l cl. C 131, publ. 4 Apr 57, pat. started 1 Dec 53, appl. pub. 11 Oct 56, pat.pub. 21 Mar 57 (priority of the pat. appl. has been claimed in Great Britain as of 26 Jan 53).

DESCRIPTORS: *Cereals, *Starches, *Flour, Material separation, Particles.

In this process the cereal flour which serves as raw material is subjected to a pre-treatment in order to extract the finest grain particles before washing. This is done by means of centrifugal sifting. The cereal flour is thereby suspended in an air-stream which serves as support, and is exposed to centrifugal forces. A very execiting separation of the material according to weight, i.e. grain size is obtained, whereby the fine material is separated from the coarse material. The fine material is a flour, rich in starch which can be used for various purposes, especially for bake-and cook-technical uses. The coarse material represents the starting material for the production of starch, as described in this process. (Author)

Debrentseva, N. A.
CONCERNING THE PROBLEM OF THE RELATION BETWEEN THE ODOR AND THE CHEMICAL STRUCTURE OF A MATERIAL. Part of thesis "Preparation of Esters of Cinnamic Acid with the idea to Prepare Aromatic Food Products. [1963] 21p.
Order from OTS or SLA $2.60 63-16141

Trans. of Akademiya Navuk BSSR [Minsk]. Izvestiya, 1948, no. 2, p. 114-124.

DESCRIPTORS: *Food additives, *Cinnamic acids, Esters Alcohols, Ketones, Nitro radicals, *Chemical bonds, *Molecular structure, *Odors, *Taste.

The aim of the present work was to find a connection between the chemical structure of materials and their aroma properties; the idea was to find a number of nice-smelling substances which could be applied in the food industry to impart a desired flavor to edible materials. (Author)

Diefenbach, Albert.
PURIFYING OF COCOA BEANS. [1963] [4]p.
Order from OTS or SLA $1.10 63-14984

Trans. of German patent 653,175, cl. 53f, gr. 1, D 70200 IV a/53f, issued 16 Nov 37, pub. 4 Nov 37, pat. from 24 Apr 35 (priority of notice in Switzerland from 21 July 34 is taken into consideration).

DESCRIPTORS: *Purification, *Cocoa, Solubility, Oils, Sucrose, Heat treatment.

Ermolenko, V. D.
A STUDY OF FORMS OF BONDS BETWEEN FOOD MATERIALS AND MOISTURE BY THE METHOD OF PHYSICAL CHARACTERISTICS. [1963] [14]p. 18 refs.
Order from OTS or SLA $1.60 63-14949

Trans. of [Izvestiya Vysshikh Uchebnykh Zavedenii. Pishchevaya Tekhnologiya] (USSR) 1961, no. 1 [p. 140-146].

DESCRIPTORS: Food, Moisture, *Sorption, *Flour, Bread, *Starches, *Bakery products, Physical properties, Heat treatment, Temperature, Electrical properties, Adhesion, Hygrometers.

Proposed is the method of a complex research of thermophysical, electrophysical and hygrometric characteristics, with the intention to clarify the forms of bonds between the moisture and the food products. This method made it possible to establish the limits of different forms of bonds of moisture with the food materials, and their transformation in the process of the heat treatment. (Author)

Ezio, Emiliani.
EXTRACTION BY FREEZING OF GLUTAMINE CONTAINED IN SUGAR BEETS AND OTHER PLANTS. [1963] 4p. 13 refs.
Order from SLA $1.10 63-16138

Trans. of Annali di Chimica (Italy) 1938, v. 28, p. 405-408.

DESCRIPTORS: *Glutamine, *Beets, Rice, Plants (Botany), Freezing, Separation.

Gründer, W.
GRANULAR CHARACTERISTICS CURVES OF RYE AND WHEAT FLOURS (Feinheitskennlinien von Roggen- und Weizenmehlen). [1963] [20]p. (foreign text included) 10 refs.
Order from SLA $1.60 63-14954

Trans. of das Mühlenlaboratorium (Germany) 1932 [v. 2] no. 14, p. 85-90.

DESCRIPTORS: *Particles, Rye, Wheat, *Flour, *Bakery products, Food.

Gründer, W
THE INFLUENCE OF GRANULAR SIZE AND THE FREE SURFACE ON GLUTEN AND FERMENTATION CHARACTERISTICS OF WHEAT FLOURS (Der Einfluss der Korngrösse bzw. Freien Oberfläche aud Kleber- und Triebcharakteristik bei Weizenmehlen). [1963] [18]p. 7 refs.
Order from SLA $1.60 63-14956

Trans. of das Mühlenlaboratorium (Germany) 1935, v. 5, no. 2, p. 19-26.

DESCRIPTORS: Particles, *Gluten, *Fermentation, Wheat, *Flour, Bakery products, Food.

Hanson, Ernst Georg.
FLUORESCENCE MICROSCOPIC METHOD FOR OBSERVATION OF GLUTEN FORMATION IN CEREAL FLOUR DOUGHS. [1963] [8]p. 1 ref.
Order from SLA $1.10 63-16298

Trans. of Z[eitschrift] für Lebensmittel-Untersuchung und Forschung (West Germany) 1957, v. 106, no. 3 p. 196-200.

DESCRIPTORS: *Fluorescence, *Microscopy, Cereals, Flour, *Bakery products, *Gluten.

It was determined that thiazole yellow is suitable for the effective color development of cereal protein. With the aid of this color substance, it is possible to show the morphological changes which the cereal protein suffers during treatment of the dough (kneeding and shaping). For each type of bakery goods, an optimal microscopically visible "gluten development condition" exists. Also the differential of the cereal protein by various dough preparations is recognizable. (Author)

Hanssen, Ernstgeorg; Ihlenfeldt, Rosemarie, and Florian, Georg.
ABOUT THE MICROSCOPICAL DETECTION OF SPICES AND OTHER VEGETABLE ELEMENTS IN FOOD. [1963] 9p. (figs. refs. omitted).
Order from SLA $1.10 63-16297

Trans. of Zeitschrift fur Lebensmittel-Untersuchung und Forschung (West Germany) 1957, v. 105, no. 5, p. 361-371.

DESCRIPTORS: Microscopy, *Condiments, Food, *Microphotography, Determination.

The microscopic-histologic investigation is a means of detecting vegetable elements in food. However, it is necessary to prepare the material chemically prior to investigation. For this a method is described which is applicable to numerous foods, such as sausage, pastry, spice or herb-powders, jam, fruit products. The presence of vegetable elements in these products can be shown by microphotography. Attention is called to several significant elements of currants, apricots, paprika and vanilla, since the existing literature does not always present sufficient picture material. (Author)

Heintze, K. and Braun, F.
RELATIONS BETWEEN TASTE PERCEPTION OF GLUTAMATE AND pH VALUE. [1963] 9p. 4 refs.
Order from SLA $1.10 63-16255

Trans. of Deutsche Lebensmittel-Rundschau (West Germany) 1958, v. 54, no. 2, p. 25-28.

DESCRIPTORS: *Taste, Perception, *Glutamic acid, *Calcium compounds, *Condiments, Salts, Food, Vegetables, Hydrogen ion concentration.

There is deduced a quantitative connection between gustative glutamate effect and the pH value of a food. When peas and beans were sterilized with an infusion solution weakly alkalized with calcium hydroxide there was found at the organoleptic testing a surprisingly-good taste, which it was possible to attribute to a calcium-glutamate formation. With beans this effect does not occur with all varieties. (Author)

Hess, Kurt and Hanssen, Ernstgeorg.
PROCESS FOR THE PRODUCTION OF NATIVE, VEGETABLE PROTEIN. [1963] 5p. 2 refs.
Order from OTS or SLA $1.10 63-14943

Trans. of German patent 960,331, cl. 531, gr. 1 06, internat'l cl. A 23j, pat. started 1 Feb 52, appl. pub. 20 Sep 56, granted 28 Feb 57, pub. 21 Mar 57.

DESCRIPTORS: *Proteins, Vegetables, *Flour, Wheat, *Cereals, Starches, Material separation, Centrifuges.

The invention concerns a process for the production of native, vegetable protein from starch-and protein-containing material, especially grain berries, in which the finely dispersed material, principally flour, is suspended in a water-free liquid in a manner, generally used for the separation of bran and inorganic constituents, whereby the liquid must have a specific weight between that of the starch and that of the protein. The more readily deposited solid substances, namely the starch granules are removed from the suspension after agitating by centrifuging, sedimenting, washing, etc., and the remaining portion of the solid substances, namely the native protein is separated from the suspension agent in the generally known manner. (Author)

Isaeva, G. Ya., Enoshevskaya, K. K., and Trotsenko, M. A.
SEPARATE DETERMINATION OF SEVERAL ORGANIC PHOSPHORUS INSECTICIDES PRESENT IN FOOD PRODUCTS OF PLANT ORIGIN. [1963] [14]p. 1 ref. FASEB manuscript no. S67-3.
Order from OTS or SLA $1.60 63-23054

Trans. of Voprosy Pitaniya (USSR) 1962, v. 21, no. 6, p. 64-67.

DESCRIPTORS: Chemical analysis, Organic compounds, *Phosphorus, *Insecticides, *Food, Plants (Biology).

Joppien, P. H.
IDENTIFICATION AND DETERMINATION OF VANILLIN AND ETHYL VANILLIN IN FOODS. [1962] 16p. 10 refs.
Order from SLA $1.60 63-16650

Trans. of Z[eitschrift für] Lebensmittel-Untersuch[ung] und Forschung (West Germany) 1961, v. 115, no. 1, p. 20-26.
Another trans. is available from K-H $20.00 as K-H 11499-d [1962] 16p.

DESCRIPTORS: Determination, Indentification, *Food, Condiments, Taste.

A method is described by which vanillin and ethyl vanillin can be clearly identified and determined in foods even when present in small amounts. Special methods for the isolation of the two substances in individual foods are described with the aid of examples. The identification and determination is carried out via 2,4-dinitrophenylhydrazone by means of paper chromatography and subsequent absorption measurements in the spectrophotometer. The mean limit of error generally is found to be within 3%. Ethyl vanillin is preferably utilized in essences and foods. Samples investigated of vanillin sugar, eggnog and cocoa products exhibited no ethyl vanillin. In foods with a vanilla flavor and in essences with a vanilla flavoring, ethyl vanillin was detected in the predominant number. The quantitative ratios differ extensively. The ambiguities in the declaration requirements for ethyl vanillin in essences, basic substances and foods with a vanilla flavor are pointed out. It is proposed that the amount of ethyl vanillin to be exempt from the declaration requirements be limited to 1/6 of the amount of vanillin utilized in mixtures of vanillin and ethyl vanillin. (Author)

Kacharyan, G. A.
THE DETERMINATION OF FAT PERCENTAGE IN MIXTURES IN INDUSTRY. [1963] 2p. 2 refs.
Order from OTS or SLA $1.10 63-18034

Trans. of Khlebopekar[naya] i Konditer[skaya] Prom[yshlennost'] (USSR) 1959, v. 3, no. 9, p. 36-37.

DESCRIPTORS: *Fats, *Oils, Bread, *Bakery products, Mixtures, Determination, Industries.

Kaether, Willy, Haberich, Willi and others.
PROCEDURE FOR PROCESSING OF FILTRATES OF THE SUGAR CRISTALLIZATION. [1963] [11]p. 4 refs.
Order from OTS or SLA $1.60 63-14793

Trans. of German patent 1,024,900, F 21302 IV a 89d, cl. 89d 10, internat'l cl. C 13f, appl. 25 Sep 56, pub. of appl. and issuance of specifications 20 Feb 58, by Bayer Joint Stock Co., Bavaria Plant.

DESCRIPTORS: *Carbohydrates, Crystallization, *Purification, Ion exchange, Quality control, Liquids, Bleaching.

The invention involves a procedure for processing of filtrates of the sugar cristallization, characterized in as much that filtrates, which can not be reduced any more to white sugar quality can be conducted through processing, according to well known salt removing

procedures, particularly with ion exchangers and if the occasion arises, under bleaching be brought to a quotient of at least 93 and the sugar evaporation to at least a white sugar quality. (Author)

Kasinova, N. E.
MINERAL CONTENT OF FISH MEAT (Soderzhanie Mineral'nykh Elementov v Myase Ryb). 1963, 4p. 3 refs. PL-480 Int.
Order from OTS $0.50 63-11113

Trans. of Voprosy Pitaniya (USSR) 1961, v. 20, no. 1, p. 74-77.

DESCRIPTORS: *Fishes, Food, *Minerals, Chemical analysis, *Nutrition, Inorganic compounds, Fats, Nitrogen compounds.

The meat of goby, grey mullet and pelamyds was analyzed with reference to potassium, calcium, magnesium, phosphorus, iron, moisture, fat, nitrogenous substances, and ash content.

Komatsu, Shigeru.
METHOD OF MAKING GLUTAMIC ACID OR ITS SALTS FROM PROTEIN. [1963] 4p.
Order from OTS or SLA $1.10 63-14537

Trans. of Japanese patent 93,152, cl. 174 - 8, Seasoning, public notice 2,551, 1931 (supplement to patent 92,068, appl. 10 Apr 28, public notice 8 June 31, pat. 8 Oct 31) by Suzuki Shoten Inc.

DESCRIPTORS: *Glutamic acid, *Proteins, Salts, Heat treatment, Inorganic acids, Hydrolysis, Separation, Condiments,

Kosmin, N. P.
CONTRIBUTION TO THE INVESTIGATION OF PROTEINS OF DIFFERENT CEREALS. [1963] 6p. 1 ref.
Order from SLA $1.10 63-16340

Trans. of die Mühle (West Germany) 1958, v. 95, no. 12, p. 153-154.

DESCRIPTORS: *Proteins, *Cereals, Gluten, Chemical analysis.

Moebes, E. and Wieninger, L.
EFFECT OF EXCHANGE OF ALKALI IONS FOR CALCIUM ON THE PROCESSING AND YIELD OF SUGAR JUICES. [1963] 11p. (figs. omitted) 9 refs.
Order from SLA $1.60 63-16363

Trans. of Zucker (West Germany) 1955, v. 8, p. 129-134.
Another trans. is available from SLA mi$2.40, ph$3.30 as 59-17638 [1959] 14p.

DESCRIPTORS: *Vegetables, *Carbohydrates, *Ion exchange, Exchange reactions, Carbon, *Calcium, Sodium, Ammonia, Processing, Viscosity, Crystallization.

For abstract see Technical Translations 2: 654, 1959.

Moebes, E.
THE INFLUENCE OF THE CATIONS ON THE SOLUBILITY OF SACCHAROSE AND THE VISCOSITY OF IMPURE BEET SUGAR SOLUTIONS. [1963] 22p. (figs. omitted) 24 refs.
Order from SLA $2.60 63-16362

Trans. of Zucker (West Germany) 1957, v. 10, p. 78-85.

DESCRIPTORS: *Carbohydrates, *Beets, Solubility, Viscosity, *Sucrose, Ions, Impurities, Magnesium, Calcium.

The solubility of the saccharose in impure sugar solutions is dependent upon the nature and concentration of the cations present in these solutions. The ions of the alkaline-earth metals magnesium and calcium have a strong solubility-reducing effect by binding the water present in the form of hydrates. A reaction of the ions of the alkaline-earth metals with saccharose could not be observed in any of the cases. The largest part of the saccharose normally remaining in the molasses can be obtained by substituting the alkali metals by magnesium or calcium. The viscosity of impure sugar solutions depends upon the nature and concentration of the cations present. It is increased greatly by the alkaline-earth metals or such ions which are unable to react with saccharose, the more so the stronger their capability of reacting with water. The viscosity of the organic constituent of the nonsugar substances corresponds just about to that of a pure sugar solution of the same concentration. (Author)

Oeda, Haruomi.
PROGRESS OF TECHNOLOGY FOR THE PRODUCTION OF MONO SODIUM GLUTAMATE. [1963] 25p.
Order from SLA $2.60 63-18056

Trans. of Kagaku to Kogyo [Tokyo] (Japan) [1961] v. 14, no. 3, p. 204-212.

DESCRIPTORS: *Sodium compounds, *Glutamic acid, Salts, *Condiments, Beets, Production.

Onishi, Densaburo; Okaue, Gentaro, and Harada, Shigeki.
RICE-POLISHING MACHINE. [1963] 3p.
Order from OTS or SLA $1.10 63-16058

Trans. of Japanese patent 3,097 specification, appl. 16 Oct 1896, granted 20 Apr 1898.

DESCRIPTORS: *Rice, *Machines, Design, Material separation.

Parlow, Alfred and Bender, Phillip.
PROCEDURE FOR THE PREPARATION OF CEREAL GLUT IN DRY FORM. [1963] 6p. 2 refs.
Order from OTS or SLA $1.10 63-14939

Trans. of German patent 1,098,799, F 16411 IVa/53k, cl. 53k 2/01, internat'l cl. A 231, appl. 20 Dec 54, pub. of appl. and issuance of specifications 2 Feb 54, by Rusk and Nutritive Products Plant, Friedrichsfelde Milupa-Pauly G. m. b. H.

DESCRIPTORS: *Cereals, Wheat, *Dehydrated foods, Preparation, Preservation, Storage.

The object of the invention is a procedure, which makes the industrial preparation of cereal glut in dry form possible, and furnishes a product, that can be rapidly transformed in the home, into edible cereal glut. Furthermore, the cereal glut, prepared according to this invention, has the additional advantage, that even with prolonged storage, no disturbing alterations can be observed, which would influence the quality of the product. (Author)

Petitpas, Julien.
PROCEDURE FOR AGGLOMERATION OF EDIBLE PRODUCTS. [1963] 3p.
Order from OTS or SLA $1.10 63-14779

Trans. of French patent 670,889, gr. 2, cl. 4, appl. 28 June 28, granted 6 Aug 29, pub. 5 Dec 29. Another trans, is available from OTS or SLA $1.10 as 60-16647 [1961] 3p.

DESCRIPTORS: Food, *Starches, *Milk, Agglutination.

Quentin, G.
INFLUENCE OF INORGANIC CATIONS ON THE SOLUBILITY OF SUCROSE IN MOLASSES. [1963] 11p. 8 refs.
Order from SLA $1.60 63-16365

Trans. of Zucker (West Germany) 1954, v. 7, p. 407-410.

DESCRIPTORS: *Sucrose, Solubility, Solvent action, Ions, *Lithium, *Sodium, *Potassium, *Calcium, Crystallization.

The influence of lithium, sodium, potassium, and calcium on the solubility of sucrose in molasses was investigated. The strong differences in the action of the various substances found thereby suggest that the main influence on the sucrose solubility must be attributed to the inorganic cations and thus confirm the findings of former authors. Regarding the intensity of their action, we found at about the same concentration conditions the order K, Na, Li, and Ca. Only a slight difference was observed between the solubility-increasing action of potassium and that of sodium. (Author)

Schuurink, Frederic Ao Le.
METHOD FOR THE IMPROVEMENT OF DOUGH OR OF FLOUR FOR THE PREPARATION OF BREAD, CAKE, AND OTHER BAKING PRODUCTS. [1963] [9]p. 5 refs.
Order from OTS or SLA $1.10 63-14980

Trans. of Dutch patent 59,870, n.d.

DESCRIPTORS: *Flour, *Bread, *Bakery products, *Cellulose ethers.

The invention involves a method for the improvement of flour or of dough for the preparation of bread, cake, or other baking products, by the addition of one or more cellulose derivatives which swell in water or watery solutions, preferably cellulose ethers; these cellulose derivatives are to be added to the flour or dough before or during the mixing in quantities of at least 0.25%, but preferably about 1% or 2% of the weight of the flour mixed in the dough. (Author)

Shapiro, L. I.
IS BONE CHARCOAL FILTRATION NECESSARY FOR MODERN REFINERIES? [1963] 2p.
Order from OTS or SLA $1.10 63-16368

Trans. of Sakharnaya Promyshlennost' (USSR) 1954 [v. 28] no. 5, p. 14-15.

DESCRIPTORS: *Charcoal, Bone, *Filters (Fluid), Refineries, Carbohydrates, Processing.

Spensley, Jacob William.
IMPROVED PROCEDURE FOR BREAKING AND OPENING OF WHEAT, RICE AND OTHER ANALOGUOUS MATERIALS. [1963] [6]p. 2 refs.
Order from OTS or SLA $1.10 63-14781

Trans. of French patent 563,666, Subj. Alimentation: mills and related industries, appl. 12 Mar 23, granted 3 Oct 23, pub. 11 Dec 23.

DESCRIPTORS: *Wheat, *Rice, *Flour, *Cereals, *Grinders, Material separation.

Sylmans, C.
THE PRACTICAL EXHAUSTIBILITY OF JAVA MOLASSES. [1963] [53]p. 13 refs.
Order from SLA $5.60 63-16370

Trans. of Archief voor de Suikerindustrie in Nederlandsch-Indie. Deel 2(Indonesia) 1934 [v. 42] no. 6, p. 167-209.

DESCRIPTORS: *Carbohydrates, *Glucose, *Sucrose, Purification, Ash, Analysis, Statistical data.

MACHINERY, FABRICATION, AND ACCESSORY EQUIPMENT

ORDERS AND MEDALS AWARDED FOR EXCELLENCE IN THE CONSTRUCTION, PRODUCTION, AND MASTERY OF POWER MACHINERY. USSR Industrial Development: Soviet Power Machinery no. 17. 16 July 63, 12p. JPRS: 20190.
Order from OTS $0.50 63-31298

Partial trans. of Verkhovnyi Sovet. Vedomosti (USSR) 1962 [v. 25] no. 39(1126) p. 872-989.

DESCRIPTORS: *Industrial production, *Power equipment, *Machines, Labor, Employee relations, *Awards.

"RHEWUM" SONIC SIFTING MACHINES: DESCRIPTION AND OPERATING SPECIFICATION OF SERIES TYPE AND BRIDGE TYPE MACHINES. [1963] [25]p. (figs. omitted).
Order from SLA $2.60 63-16285

Trans. of mono. (report) from "RHEWUM" Rheinische Werkzeug- und Metallwarenfrabrik, G. m. b. H., Remscheid/Luttringhausen, n. d.

DESCRIPTORS: *Material separation, *Strainers, *Machines, Oscillation, Design, Operation, Maintenance.

Topics include; Description of the operation of the machine; fields of operation and application possibilities; description of the machines; the assembly of the machines (installation); putting the machines into operation; the servicing and maintenance of the machines table of sieve nettings; list of the accompanying tools; and Wiring diagram.

Isaev, A. I. and Tashlitskii, N. I.
UTILIZACION DEL ANHIDRIDO CARBONICO COMO REFRIGERANTE CON OBJETO DE ELEVAR LA DURACION DE UTILES CORTANTES DE MAQUINAS HERRAMIENTAS (Primenenie Uglekisloty dlya Povysheniya Stoikosti Reztsov) (Utilisation of Carbon Dioxide as a Coolant in the Extension of the Life of Machine-tool Cutting Elements). 21p. 4 refs. CID: 62-226.
Order from OTS, ETC or CID $0.83 62-29226

Trans. in Spanish of Vestnik Mashinostroeniya (USSR) 1955, v. 35, no. 11, p. 42-48.

DESCRIPTORS: Dioxides, Carbon compounds, *Cutting tools, Machine tools, Machining, *Coolants.

Kurkin, V.
A-440 PULSE COUNTER. USSR Industrial Development: Soviet Precision Equipment No. 91. 17 July 63, 3p. JPRS: 20214.
Order from OTS $0.50 63-31310

Trans. of Sovetskaya Torgovlya (USSR) 1963 [v. 36] no. 5, p. 47-48.

DESCRIPTORS: Industrial production, *Precision equipment, *Pulse counters, Dispensers.

Lindmark, S. A. J.
SCRAPER FOR ROAD GRADERS OR THE LIKE, tr. by J. R. -P. 24 May 63, 6p. (figs. omitted).
Order from OTS or SLA $1.10 63-19621

Trans. of Swedish patent 83,018, cl. 19c:10, by Specialmaskiner i Göteborg AB, patented from 21 June 32, granted 31 Jan 35, pub. 2 Apr 35.

DESCRIPTORS: *Earth-handling equipment, Road-building equipment, Design.

Samilkin, V. D.
PRUEBAS DE LOS TRACTORES DT-24 Y DT-28 CON RUEDAS DE ACERO Y GARRAS POSTIZAS (Ispytaniya Traktorov DT-24 i DT-28 s Nakladnymi Zatsepami i Stal'nymi Kolesami) (Testing of the DT-24 and DT-28 Tractors Provided with Steel Wheels and Artificial Engaging Dogs). 18p. 2 refs. CID: 62-299.
Order from OTS, ETC or CID $0.80 62-29299

Trans. in Spanish of Traktory i Sel'khozmashiny (USSR) 1958, no. 4, p. 6-12.

DESCRIPTORS: Tests, *Tractors, Vehicle wheels, Steel.

Selig, H.
MULTIPLE-DISC CLUTCHES OPERATED ELECTROMAGNETICALLY AND WITH OIL UNDER PRESSURE (Elektromagnetisch und Druckölgeschaltete Lemellenkupplungen). [1962] [31]p. (foreign text included).
Order from SLA $3.60 62-18754

Trans. of Technische Mitteilungen (West Germany) 1958, v. 51, no. 8, p. 356-363.

DESCRIPTORS: *Clutches, Disks, Operation Electromagnetic drives, Oils, Pressure, Torque, Transmission.

Zacconi, Vincenzo and Zacconi, Renzo.
IMPROVEMENT IN SEMI-AUTOMATIC MACHINES FOR MOLDING GLASS BOTTLES OR SIMILAR OBJECTS, tr. by J. B. 24 May 63, 4p. (figs. omitted).
Order from OTS or SLA $1.10 63-19618

Trans. of Italian patent 331,686, cl. XV, appl. 29 May 33, granted 13 Nov 35, printed Aug 36.

DESCRIPTORS: *Molding, Industrial equipment, Machines, *Glass, Containers.

Engines and Propulsion Systems

Ernst, H.
THE DIESEL ENGINE WITH LATERALLY CONTROLLED VALVES. [1963] 4p. (figs. omitted).
Order from SLA $1.10 63-14277

Trans. of [ATZ] Automobiltechnische Zeitschrift (Germany) 1939, v. 42, no. 20, p. 539-541.

DESCRIPTORS: *Diesel engines, Combustion chambers, Exhaust valves, Intake valves, Fuel nozzles, Design.

Khudabashev, K. A.
EFFECT OF TURN SHORT-CIRCUITS IN A TURBOGENERATOR ROTOR ON ITS STATE OF VIBRATIONS. [1962] [15]p. 6 refs. [DSIR] NLL M. 3572.
Order from OTS or SLA $1.60 62-24688

Trans. of Elektricheskie Stantsii (USSR) 1961 [v. 32] no. 7, p. 40-45.

DESCRIPTORS: *Vibration, Machines, *Vibrators (Mechanical), Temperature, Surfaces, *Generators, *Turbines, *Circuits, *Rotor blades (Turbomachinery), Load distribution.

Turn short-circuits in the rotor winding may set up rotor vibrations as a consequence of unequal magnetic pulls, as well as owing to non-uniform temperature rises of the rotor surface along the periphery. To render the appreciable variations of the state of vibrations noticeable no considerable temperature differences over the rotor surface are necessary. Every unit in which the state of vibrations underwent changes with variations of the active load has to be carefully tested for turn short-circuits in the rotor winding. The vibration of generators with insignificant turn short-circuits in the rotor winding changes (under asymmetrical loads) at a higher rate than in machines without turn-short-circuits in the rotor winding. (Author)

Shalyagin, V. N.
DINAMICA DEL FRENADO DE AUTOMOVILES UTILIZANDO EL MOTOR (Dinamika Tormozheniya Avtomobilya Dvigatelem) (Automobile Engine Braking Dynamics). 10p. CID: 62-259.
Order from OTS, ETC or CID $0.80 62-29259

Trans. in Spanish of Avtomobil'naya Promyshlennost' (USSR) 1959, no. 4, p. 32-33.

DESCRIPTORS: *Internal combustion engines, Vehicles, *Vehicle brakes.

Shukhov, O. K.
FUNCIONAMIENTO DEL SISTEMA PRINCIPAL DE ALIMENTACION Y DEL RALENTI DEL CARBURADOR (O Rabote Glavnoi Doziruyushchei Sistemy i Sistemy Kholostogo Khoda Karbyuratora) (Operation of the Main Feeding System and of the Carburetor Throttle). 20p. 4 refs. CID: 62-234.
Order from OTS, ETC or CID $0.80 62-29234

Trans. in Spanish of Avtomobil'naya Promyshlennost' (USSR) 1956, no. 1, p. 20-23.

DESCRIPTORS: *Carburetors.

Stefanovich, Yu. G. and Ivanov, S. N.
UTILIZACION DE ACOPLAMIENTOS ELASTICOS DE GOMA EN LA TRANSMISION (Primenenie Rezinovykh Muft v Silovoi Peredache) (Utilisation of Flexible Rubber Couplings in Drive Assemblies). 14p. 8 refs. CID: 62-229.
Order from OTS, ETC or CID $0.80 62-29229

Trans. in Spanish of Avtomobil'naya Promyshlennost' (USSR) 1958, no. 4, p. 41-44.

DESCRIPTORS: *Flexible couplings, Rubber, Transmissions.

Syuzyumova, E. M.
ON THE SIMILARITY OF SYSTEMS OF REGULATING GAS TURBINES. 28 Feb 63 [15]p. 4 refs FTD-TT-62-1815 AD-400 547
Order from OTS or SLA $1.60 63-19157

Unedited rough draft trans. of Vsesoyuznyi Nauchno-Issledovatel' skii Insitut Zheleznodorozhnogo Transporta. Trudy (USSR) 1961, no. 214, p. 52-62.

DESCRIPTORS: *Gas turbines, Automatic, Control systems, *Speed regulators, *Stabilization systems Servomotors, Mechanical engineering.

Zhukovskii, G. V., Samoilovich, G. S., and Pis'min, I. N.
CALCULATING RADIAL OVERFLOWS IN A TURBINE STAGE [AND] MEASURING PRESSURE PULSATIONS AND DYNAMIC STRESSES ON ROTATING VANES OF AN AXIAL COMPRESSOR. 2 Apr 63 [23]p. 11 refs. FTD-TT-63-81, AD-402 591
Order from OTS or SLA $2.60 63-19341

Unedited rough draft trans. of Teploenergetika (USSR) 1962 [v. 9] no. 8, p. 47-55.

DESCRIPTORS: *Axial-flow compressors, *Gas turbines, *Fluid flow, Turbine wheels, Turbine blades, Pressure, Stresses, Dynamics.

Presented are experimental data on the testing of gas turbine stages with cylindrical boundaries of flow-through part and D/l = 4, 8. A comparison was made with the testing calculations using simplified and inverse equations of radial equilibrium. It was shown, that the divergences between experimental and calculated data are due to final phenomena and the flow throu through. (Zhukovskii). Described are studies of pressure pulsations and the dynamic stresses of axial compressor vanes caused by them. The investigations were conducted by the tensometric sounding method. The condition at which the phenomenon of rotating flow separation takes place, was investigated. (Samoilovich and Pis'min)

Machine Parts and Mechanisms

NUT, tr. by P. C. C. 6 Mar 63, 2p. (figs. omitted).
Order from OTS or SLA $1.10 63-19055

Trans. of Swiss patent 247,514, cl. 96a, by Aktiengesellschaft Brown, Boveri and Cie., appl. 20 Dec 45, granted 15 Mar 47, pub. 1 Dec 47.

DESCRIPTORS: *Locking fastener devices, *Bolts, Design.

A nut with internal recess for operation, to be engaged by an insertion wrench, characterized in that the thread thereof is intersected by said recess which is in the form of an internal dodecagon.

Bauer, C. O.
BOLTS AND NUTS COLD FORMED FROM STAINLESS AND ACID-RESISTANT HIGH-GRADE STEELS. June 63.
Order from BISI #2 5s BISI-3052

Trans. from Industrie Anzeiger (West Germany) 1962 [v. 84] no. 49.

DESCRIPTORS: *Steel, *Stainless steel, Material forming, *Bolts, *Locking fastener devices, Corrosion resistant alloys.

Dzen', V. I.
WELDED GEAR WHEEL DESIGNS. Aug 59 [9]p. 5 refs. Davy Trans. 228; BISI Trans. 1377; [DSIR] NLL M. 4731.
Order from OTS or SLA $1.10 62-24232

Trans. of Svarochnoe Proizvodstvo (USSR) 1958, no. 1, p. 19-21.

DESCRIPTORS: *Gears, Design, *Welds, Stresses.

The following factors must be considered when selecting welded gearwheel design: (1) the efficiency of the design - the simplicity of preparing the parts, the ease of setting up, whether the best sequence of welding from the technical point of view can be employed, and whether the welding can be automatic; (2) the use of welded joints which cause the smallest stress concentrations in the welds; (3) the placing of the welds as far as possible at the points where in operation they will bear the smallest loads; and (4) the retention of sufficient structural rigidity to ensure that, during both welding and operation, deformation of individual parts of the gearwheel will be minimum. Welded reduction gearing wheels, particularly large diameter wheels, are superior to cast or bolted wheels as regards both weight and the labour required when producing them. Tyred wheels are even more laborious to manufacture. It is preferable for wheels to be all-welded.

Hayashi, Yoshimasa.
AN IMPROVED SHOKUSHI. [1963] 4p. (figs. omitted).
Order from OTS or SLA $1.10 63-16063

Trans. of Japanese patent 4,642, appl. 1 Feb 01, granted 11 Apr 01.

DESCRIPTORS: *Pistons, Piston rings, Design, *Steam, Cylinderical bodies.

Peruglia, Marco.
IMPROVEMENTS IN ANNULAR GASKETS TO BE MOUNTED ON THREADED SEATS, PARTICULARLY SUITABLE FOR INTERNAL COMBUSTION ENGINES, tr. by F. H. B. 28 May 63, 6p. (figs. omitted).
Order from OTS or SLA $1.10 63-19619

Trans. of Italian patent 414,395, cl. 5b, appl. 17 Oct 45, granted 24 July 46, printed Nov 46.

DESCRIPTORS: *Gaskets, Spark plugs, Internal combustion engines, Design, Copper, Aluminum, Asbestos.

The improvements of the invention present the advantage over ordinary annular gaskets in that the gasket is perfectly centered on its seat when the plug, spark plug, or the like is tightly screwed in and the gasket assumes its position in the space where the said plug ends. Another advantage of said type of improved gasket consists in that, once the gasket is lodged in its proper seat, it remains undetachably joined to the plug or the like. (Author)

Stange, E.
SCREWS IN THE HIGH TEMPERATURE RANGE. July 61.
Order from BISI #3 BISI-2161

Trans. of Elektrizitätswirtschaft (West Germany) 1960 [v. 59] no. 18, p. 642-646.

DESCRIPTORS: *Screws, Standards, *High temperature research, Heat resistant metals and alloys, Damage.

Manufacturing Equipment and Processes

Bel'chenko, A. Ya. and Yatsenko, G. G.
ECONOMICAL EFFECTIVENESS OF GROUP MACHINING METHODS. 25 Mar 63 [12]p. FTD-TT-63-47.
Order from OTS or SLA $1.60 63-19489

Unedited rough draft of trans. of mono. Gruppovye Metody Obrabotki Detalei Mashin, Moscow, 1961, p. 172-179.

DESCRIPTORS: Industrial production, *Machining, *Economics, Effectiveness, Management engineering, Industrial equipment, *Manufacturing methods.

Deneen, F. S. and Dunn, W. C.
IMPROVEMENTS IN THE THERMAL TREATMENT OF PIECES (OR UNITS). [1962] 5p. (figs. omitted).
Order from OTS or SLA $1.10 62-18558

Trans. of French patent 814,759, appl. 10 Dec 36, granted 22 Mar 37, pub. 29 June 37, filed in U. S. A. 14 Dec 35.

DESCRIPTORS: *Heat treatment, *Induction heating, Rings, Surfaces, Hardening.

Fiogere, Francois-Marie.
WATCHMAKER TOOL FOR CUTTING SETTING GROOVES, tr. by J. B. 30 Apr 63, 2p. (figs. omitted).
Order from OTS or SLA $1.10 63-19623

Trans. of Swiss patent 9,308, cl. 65, 24 Nov 1894.

DESCRIPTORS: *Small tools, Clocks, Milling machines, Dies, Gems (Minerals), Cutting tools.

Heyman, Moses David.
PROCESS AND APPARATUS FOR THE MANUFACTURE OF A STRIP OF MICA IN ONE PIECE. [1963] [6]p. 4 refs.
Order from OTS or SLA $1.10 62-16331

Trans. of Dutch patent application 552, 431, appl. 183,920, filed 24 Dec 53, pub. 17 July 61.
Another trans. is available from OTS or SLA $1.10 as 62-10342 [1961] 5p.

DESCRIPTORS: *Mica, Processing, Industrial equipment, *Material separation.

For abstract see Technical Translations 7: 656, 1962.

Nuret, H.
DIAGRAM FOR DAILY PRODUCTION OF 500-600 CWT. [1963] 6p.
Order from SLA $1.10 63-16477

Trans. of Ecole Française de Meunerie. Bulletin des Anciens Elèves, 1957, no. 158, p. 65-69.

DESCRIPTORS: *Material separation, *Cereals, Machines, *Milling machines, Strainers, Distribution.

Popovskii, B. V.
APPLICATION OF THE ROLLING-UP FABRICATION METHOD TO WELDED PLATE WORK. [1962] 9p.
Order from RIS $15.00 RIS E-768

Trans. of Montazhnye i Spetsializirovannye [Raboty v Stroitel'stve] (USSR) 1960 [v. 22] no. 11, p. 7-11.
Another trans. is available from HMSO $0.77 in NLL Translations Bulletin, 1961, v. 3, no. 5.

DESCRIPTORS: *Welding, *Steel, *Metal plates, *Structural shells, Pipes.

Transport, Traction and Hoist Facilities

HYDRAULIC HAULAGE AND HOISTING IN MINING: SELECTED ARTICLES. 1963, 40p. 21 refs.
PL-480 Int.
Order from OTS $0.50 63-11092

Trans. of Master Uglya (USSR) 1960 [v. 9] no. 9, p. 9; Ugol' (USSR) 1960 [v. 35] no. 7, p. 48-53; 1961, v. 36, no. 9, p. 36-41; Ugol' Ukrainy (USSR) 1961, v. 5, no. 4, p. 23-24; Izvestiya Vysshikh Uchebnykh Zavedenii. Gornyi Zhurnal (USSR) 1961, no. 1, p. 5-12; Gornyi Zhurnal (USSR) 1959, no. 9, p. ##44-47.
##A trans. in French is available from OTS or SLA $1.10 as 62-33758, CEA-tr-R1550, 24 Mar 62 [9]p.

DESCRIPTORS: *Mining engineering, *Coal, Rock (Geology), Transportation, *Hydraulic systems, *Conveyors, Hoists.

Contents:
Hydraulic haulage of coal in pipelines, by Yu. Avlasenko
Hydraulic haulage of lump coal in a fine-coal slurry, by I. D. Pshenichnyi and V. V. Trainis
Improvements and calculations for the suction system in hydraulic haulage installations, by V. G. Geier and V. I. Gruba
Hydraulic haulage of run-of-mine coal, by V. V. Trainis
Improvements in hydraulic hauling systems, by V. I. Mogilevskii
Experimental investigations of the basic parameters of hydraulic haulage of coal and rock mixtures in flumes, by A. I. Kuprin and Chen Da-dzhun
##Installation for hydraulic haulage of hard and abrasive rocks, by N. I. Kazakov.

INSTALACIONES PARA EL LAVADO DE AUTOMOVILES Y AUTOBUSES (Moechnye Ustanovki dlya Avtomobilei i Avtobusov) (Automobile and Passenger-bus Washing Plants). 10p. CID: 62-228.
Order from OTS, ETC or CID $0.80 62-29228

Trans. in Spanish of Mekhanizatsiya Trudoemkikh i Tyazhelykh Rabot (USSR) 1958 [v. 12] no. 7, p. 45-46.

DESCRIPTORS: *Passenger vehicles, Cleaning, Maintenance equipment.

Bertaux, André.
IMPROVEMENT IN MATERIAL HANDLING TRUCKS PROVIDED WITH A SCOOP, tr. by F. H. B. 31 Dec 62, 12p. (figs. omitted).
Order from OTS or SLA $1.60 63-15444

Trans. of French patent 1,068,273, gr. 5, cl. 6, to Freins Jourdain Monneret, appl. 10 Dec 52, granted 3 Feb 54, pub. 23 June 54.

DESCRIPTORS: *Cargo vehicles, Handling, *Hoists, Control systems, Design.

The invention relates to an Improvement in material handling trucks provided with a shovel-type scoop, in which the manual control of the lifting element or tilting element of the scoop is combined with an automatic control including a cam driven in the movement of the scoop and acting upon the lifting element in such a way as to lift the scoop before the latter reaches the ground. (Author)

Hoffer.
RECORDING INSTRUMENTS FOR AUTOMOBILES. [1963] 6p. (figs. omitted).
Order from SLA $1.10 63-16819

Trans. of Zeitschrift für Instrumentenkunde (Germany) 1931, v. 51, June, p. 318-324.

DESCRIPTORS: *Vehicle instruments, Recording systems, Design.

Liebold, Rudolf.
ARRANGEMENT FOR INTERMITTENT TRANSPORT OF A MATERIAL BY MOVEMENT OF A SOLID, LIQUID, OR GASEOUS CARRIER MEDIUM FOR INSTANCE AIR. [1963] 7p. (figs. omitted).
Order from OTS or SLA $1.10 63-16336

Trans. of German patent 895,723, cl. 81e, gr. 60, by Siemens-Schuckertwerke AG, pat. 8 Mar 42 (the period between 8 May 54 until including 7 May 50, will not be taken into account for the pat. duration) appl pub. 19 Feb 53, granted 24 Sep 53, issued 5 Nov 53.

DESCRIPTORS: *Mass transfer, *Conveyors, Solids, Liquids, Gases, Air, Fluidized solids, *Vibrators (Mechanical).

A method for intermittent movement of a material by movement of a solid, liquid, or gaseous carrier medium, for instance air, in which the carrier medium is moved back and forth in contact with the material, with intermittent speed in the desired direction of transportation is described. The reciprocal distance between the two bodies is intermittently increased or decreased, by movement of at least one of the two bodies with variable speed, and the liquid or respective gaseous carrier medium and the material to be transported surrounded by same, are within the space between the two bodies. The lower of the two bodies, one of which is on top of the other performs vibrating movements in totally or partially vertical direction with such amplitude and frequency of vibration, that it throws the upper body periodically up in the air and catches it again.

Musik, A.
NEW SERIES OF VEHICLES AT THE UL'YANOVSK AUTOMOBILE PLANT. USSR Industrial Development: Soviet Automotive Industry No. 39. 16 July 63, 5p. JPRS: 20192.
Order from OTS $0.50 63-31300

Trans. of Za Rulem (USSR) 1963 [v. 21, no. 1] p. 16-17.

DESCRIPTORS: *Automotive industry, *Cargo vehicles, *Ambulances, *Passenger vehicles, Vehicle chassis components, Tests, Fuel consumption.

Nikulina, P. A., Paderno, I. P., and Terent'ev S.A.
COMPLEX RADIO AND WIRE COMMUNICATIONS IN MARSHALLING YARDS. [1963] [5]p.
Order from OTS or SLA $1.10 63-16470

Trans. of Zheleznodorozhnyi Transport (USSR) 1962 [v. 44, no. 10] p. 48-50.

DESCRIPTORS: *Railroads, Communication systems.

Petras, J.
DEVELOPMENT OF A HYDROMECHANICAL TRANSPORTING SYSTEM BY EVALUATING AVAILABLE EXPERIMENT RESULTS. [1963] 13p. (figs. omitted).
Order from SLA $1.60 63-18025

Trans. of Freib[erger] Forsch[ungshefte. Reihe] A. [Bergbau] (West Germany) 1961, v. 222, p. 51-60.

DESCRIPTORS: *Conveyors, *Hydraulic systems, *Pipelines, Design, *Jet pumps, *Centrifugal pumps, Economics.

The systems are described, which were designed by evaluating experimental results; and questions of economics are treated. Especially pointed out are the labor saving features, the substantial savings in manpower, and the factors, which increase the output. (Author)

Povorozhenko, V. V.
PROSPECTS FOR INCREASED CONTAINERIZATION AND BETTER DISTRIBUTION OF CONTAINER CENTRES. [1963] 7p.
Order from OTS or SLA $1.10 63-14004

Trans. of Zheleznodorozhnyi Transport (USSR) 1962 [v. 44, no. 4] p. 64-66.

DESCRIPTORS: *Containers, Railroad cars, *Cargo, Handling, Railroads, Logistics.

The following topics are analyzed: Distribution of railroad freight container centres; improved utilization of container capacity; and, control of the container fleet.

Smirnov, G. M.
LIMITADOR DE LA CAPACIDAD DE CARGA DE GRUAS DE PLUMA (Ogranichitel' Gruzopod' emnosti Strelovogo Krana) (Derrick Load Capacity Control Device). 6p. CID: 62-282.
Order from OTS, ETC or CID $0.80 62-29282

Trans. in Spanish of Mekhanizatsiya Stroitel'stva (USSR) 1959, v. 16, no. 4, p. 18-19.

DESCRIPTORS: *Hoists, Control systems.

MATERIALS

PROCESS FOR THE PRODUCTION OF WETTING, DETERGENT, EMULSIFYING AND DISPERSING AGENTS. [1963] 4p.
Order from OTS or SLA $1.10 63-16014

Trans. of French patent 713,382, by I. G. Farben-[industrie] n.d.

DESCRIPTORS: *Surface-active agents, *Cleaning compounds, Bleaching agents, Dyes, *Colloids, Hydroxides, Amines.

WETTING, DETERGENT AND EMULSIFYING AGENTS. [1963] [1]p.
Order from OTS or SLA $1.10 63-16008

Trans. of French patent 645,395 [issued 27 June 28, by I. G. Farbenindustrie].

DESCRIPTORS: *Surface-active agents, *Cleaning compounds, *Colloids, Fatty acids, Oils, Nitriles.

Budnickaya, I. S.
L'ANALYSE PETROGRAPHIQUE. METHODE EXPÉDITIVE DE CONTRÔLE DE LA FABRICATION (Petrographic Analysis. Expeditious Control of Manufacture). 3p. FR-1739.
Order from OTS, ETC or CNRS $0.80 62-26456

Trans. in French of Tsement (USSR) 1960 [v. 26] no. 5, p. 32.

DESCRIPTORS: *Cements, Production, Chemical analysis, Microscopy, Aluminum, Control.

Chumadin, I. T.
USE OF INDUSTRIAL METHODS IN ASSEMBLING TECHNOLOGICAL EQUIPMENT IN CEMENT PLANTS. 23 July 63, 205p. refs. JPRS: 20316.
Order from OTS $3.50 63-31366

Trans. of mono. Industrial'nye Metody Montazha Tekhnologicheskogo Oborudovaniya Tsementnykh Zavodov, Moscow, 1961, 151p.

DESCRIPTORS: Industrial plants, *Cements, *Industrial equipment, Installation, Rotary furnaces, Machines, Construction, Transportation, Scheduling, Management engineering, Labor.

Contents:
Auxiliary equipment of modern cement plants and methods of installing the equipment
Production of rotary cement kilns in machine building plants and their delivery to the site of erection
Organizing the work for installation of rotary cement kilns
Installation of 4.5 x 170-meter rotary cement kilns
Work-production statistics on installation of equipment scheduled to be put in operation
Prevention of accidents during the installation of technological equipment of cement plants
Certain facts concerning the labor force used during the installation of the 4.5 x 170-meter cement kilns.

Determann, H. and Siebel, M.
THE EFFECT OF VARIOUS ADHESIVES USED ON CORRUGATED BOARD WITH KRAFT LINERS ON LACQUERED METALS AND WOODS EXPOSED TO CLIMATIC FLUCTUATIONS. [Jan 62] [5]p. (figs. omitted). FPRB Trans. no. 145.
Order from NRCC NRCC C-3881

Trans. of [die] Neue Verpackung (West Germany) 1961, v. 14, no. 5, p. 432, 434.

DESCRIPTIONS: *Adhesives, Containers, *Finishes, Degradation, Transportation, *Varnishes, Climatology, Electrical equipment.

Dufek, Vladimir and Navratil, Antonin.
DIAFRIKT METAL-CERAMIC FRICTION MATERIALS (A NEW CZECHOSLOVAK PRODUCT) [AND] THE PRODUCTION TECHNOLOGY OF METAL-CERAMIC FRICTION MATERIALS. 22 July 63, 19p. (figs. omitted). JPRS: 20291.
Order from OTS $0.75 63-31351

Trans. of Technicke Zpravy VUPM (Czechoslovakia) 1962, no. 4, p. 2-14, 21-26.

DESCRIPTORS: *Cermets, Metals, Ceramic materials, Friction, Industrial production, *Powder metallurgy, Manufacturing methods.

Ernst, Werner and Eppenberger, Paul.
ARRANGEMENT FOR HUMIDIFICATION OF POWDERY, GRANULOUS AND FLOCCULENT MATERIALS. [1963] [9]p.
Order from OTS or SLA $1.10 63-16329

Trans. of Swiss patent 274,225, cl. 34d, pub. 1 Aug 51, appl. 23 Apr 51, registered 31 Mar 51.
Another trans. is available from LC or SLA mi$1.80, ph$1.80 as 60-16889 [1960] [9]p.

DESCRIPTORS: Materials, *Moisture, *Powders, Particle size, Water supplies, Control systems.

For abstract see Technical Translations 4: 467, 1960.

Gol'din, M. L.
METODO PARA EL CALCULO DE LA LONGITUD Y PASO DE LA CORTINA DE CADENA (GUIRNALDA) EN UN HORNO GIRATORIO (Metodika Rascheta Dliny i Shaga Tsennoi Zavesy (girlyandy) vo Vrashchayushcheisya Pechi) (Method of Estimation of the Length and Pitch of a Revolving Furnace Pad). 10p.
CID: 62-233.
Order from OTS, ETC or CID $0.80 62-29233

Trans. in Spanish of Tsement (USSR) 1955, v. 21, no. 6, p. 23-25.

DESCRIPTORS: Measurement, *Furnaces, Pitch (Motion), *Cements.

Hata, Toshio and Uematsu, Ichitaro.
MECHANICS OF STRIPPING, PTS. 1-3. [1961] 35p. (13 figs. 5 tables. p. 1 of original text omitted) 3 refs.
Order from SLA $3.60 62-10419

Trans. of Japanese article from an unidentified source, 1947(?).

DESCRIPTORS: *Adhesion, *Mechanics.

Formulas expressing the relation between the stripping angle and the load required for stripping are derived by two different methods. The first method is based on bending-moment equilibrium, and the second method relies on a calculation of the work required for stripping. The same formula was obtained by both methods. This formula is critically examined in the light of experimental data. A K.S. sluimeter (or yarn tester) was modified as a stripping tester of the fixed-

load type. The apparatus was used to make stripping measurements of up to 100 against the same load. The relation between stripping angle and stripping load was confirmed.

Kadanov, I. R.
EMPAQUETADURA DE RESINA DE CORCHO (Uplotneniya iz Probkovoi Reziny) (Cork Resin Packing). 7p. CID: 62-286.
Order from OTS, ETC or CID $0.80 62-29286

Trans. in Spanish of Stanki i Instrument (USSR) 1956 [v. 27] no. 8, p. 40-41.

DESCRIPTORS: *Packing materials, Plastics.

Refle, K.
LIGNIN AS RAW MATERIAL. [1953] 12p. 28 refs.
Order from SLA $1.60 63-16139

Trans. of Chemiker-Zeitung (Germany) 1941, v. 65, no. 57/58, p. 264-267; no. 59/60, p. 276.

DESCRIPTORS: *Lignin, Wood, Construction, Plastics, Fertilizers, Fillers, Binders, Thermal insulation.

Segalova, E. E., Sarkisyan, R. R., and Rehbinder, P. A.
EFFECT OF ADMIXTURES OF HYDROPHILIC PLASTICIZER ON THE KINETICS OF STRUCTURE FORMATION DURING CEMENT HARDENING. Rept. at the All-State Conference of Colloid Chemistry (no. 4) Tbilisi, May 58. [1963] 14p. 12 refs.
Order from OTS or SLA $1.60 63-14713

Trans. of #Kolloidnyi Zhurnal (USSR) 1958, v. 20, no. 5, p. 611-619.

DESCRIPTORS: *Cements, *Crystallization, Hardening, *Plasticizers, Calcium compounds, Sulfonates, Aluminum compounds, Mechanical properties.

A study was made of the effect of additions of the hydrophilic plasticizer SSB (Ca-lignosulphonates) on the structure formation and mechanical strength of the stone formed in the hardening of Portland cements with various tricalcium aluminate (C_3A) contents. It was shown that the greatest lowering of the water-cement ratio and the highest increase in strength is achieved on utilization of cement mixtures in the induction period of structure formation, the latter being prolonged on the addition of SSB. Cement with high aluminate content may have a very short induction period of structure formation in the presence of the standard additions of SSB (0.2 - 0.3% per weight of the cement), and the formation of the crystallization structure of the hydroaluminate will lead either to the formation of a quick setting cement or to a strong thickening of the mixture and increase in its water content. In plasticizing the cements with high aluminate content one must considerably increase the SSB-additions. This does not decrease the strength of hardened cement stone or concrete as the SSB-addition is completely sorbed by the newly formed aluminate hydration products during their crystallization. (Author)

Subbotkin, M. I. and Trinker, B. D.
EFFECT OF VIBRO-MIXING ON THE STRENGTH OF MORTAR AND CONCRETE. [1963] 8p.
Order from OTS or SLA $1.10 63-14714

Trans. of Beton i Zhelezobeton (USSR) 1962, v. 8, no. 6, p. 271-274.

DESCRIPTORS: *Concrete, *Mortar, Vibration, Mechanical properties, Machines.

Tests carried out on various mortar and concrete mixes have demonstrated that the vibro-mixer developed by P. E. Mandrik and A. A. Shurygin guarantees better mixing of plastic and low-flowability mortar and concrete mixes than is possible in conventional mortar mixers. Vibro-mixing yields a definite effect also in mixing stiff mortar and concrete mixes which can not be mixed or are difficult to mix in conventional mortar mixers. The studies carried out have confirmed that vibro-mixing of mortar and concrete mixes is the most effective of all known methods, improves a number of properties, and increases the homogeneity of the mix, as well as the strength of mortar and concrete, particularly at early ages. (Author)

Tarasov, S. V.
HILATURA DIRECTA DEL YUTE (Bezrovnichnoe Pryadenie Dzhuta) (Direct Spinning of Jute). 17p. CID: 62-220.
Order from OTS, ETC or CID $0.80 62-29220

Trans. in Spanish of Tekstil'naya Promyshlennost' (USSR) 1956, v. 16, no. 12, p. 54-59.

DESCRIPTORS: *Threads, Textiles.

Ceramics and Refractories

Ando, Fumio.
PROCESS FOR PRODUCING FINE POWDER OF γ-ALUMINA. July 63, 7p. (figs. omitted).
Order from SA $16.00 SA Code-P-142

Trans. of published Japanese patent 13455/1962, cl. 15-F-251.2 (15-F-252) (74-K-01) appl. no. 35121/1960 filed 17 Aug 60, pub. 10 Sep 62, by Ibigawa-Denki-Kogyo Co., Ltd.

DESCRIPTORS: *Ceramic materials, Powders, *Aluminum compounds, Oxides, Production, Electric arcs, Calcination, Binders

Bezborodov, M. A., Zaviyalov, N. D., and Kurlyankin, F. A.
THE INFLUENCE OF THE RAW MATERIALS UPON THE CRYSTALLIZATION OF QUARTZ GLASS (Vliyanie Syrykh Materialov na Kristallizatsyu Kvartsevogo Stekla). [1963] [43]p. (foreign text included) 4 refs.
Order from OTS or SLA $4.60 63-14043

Trans. of Ogneupory (USSR) 1936, v. 4, p. 638-649.

DESCRIPTORS: *Glass, *Quartz, *Crystallization, Sand, Temperature, Materials, Crystal structure.

Factors were investigated which influence the crystallization of quartz glass. Experiments were undertaken about the crystallization of opaque quartz glass made from sands of various origins, and also of transparent quartz glass, and this way were found out the influences exerted by various additions and by the temperature of heating, upon the degree of crystallization. (Author)

Delrieux, J. and Rocco, D.
THOUGHTS ON THE FRACTURE OF THERMAL ORIGIN OF REFRACTORIES SUBJECTED TO SERVICE CONDITIONS. [1963].
Order from BGIRA BGIRA-569

Trans. of Silicates Industriels (Belgium) 1963, v. 28, no. 2, p. 59-70.

DESCRIPTORS: *Refractory materials, Thermal stresses, Fracture (Mechanics).

Frikell, G.
INSTALLATIONS FOR MELTING SILICA GLASS. [1963].
Order from BGIRA BGIRA-570

Trans. of Glas-Email-Keramo-Technik (West Germany) 1961, v. 12, no. 2, p. 37-40.

DESCRIPTORS: *Glass, Dioxides, *Silicon compounds, Melting.

Nosova, Z. A.
SOBRE LA SUSTITUCION DEL DIOXIDO DE ESTAÑO POR CIRCONIO EN LOS ESMALTES MATES (O Zamene Okisi Olova v Glukhikh Glazuryakh Tsirkonom) (Substitution of Zirconium for Tin Dioxide in Dull Enamels). 23p. 4 refs. CID: 62-291.
Order from OTS, ETC or CID $0.89 62-29291

Trans. in Spanish of Steklo i Keramika (USSR) 1959 [v. 16] no. 8, p. 27-32.

DESCRIPTORS: *Ceramic coatings, *Tin compounds, *Zirconium, Dioxides.

Persson, R.
CHEMICAL SURFACE RESISTANCE OF CONTAINER GLASS (Kemisk Ytresistens hos Emballageglas). [1963] 20p. 13 refs.
Order from SLA $1.60 63-18096

Trans. of Glasteknisk Tidskrift (Sweden) 1962, v. 17, no. 4, p. 91-98.

DESCRIPTORS: *Glass, Containers, Resistance (Electrical), Chemical reactions.

Bottles made of a soda-lime-silicate glass can be treated internally with acid gases to improve chemical surface resistance notably. Dealkalization can be carried out in various ways, so as to leave a thicker or thinner resistant surface layer. The thicker this surface layer, the more prolonged the surface resistance of the bottle. Surface-resistant bottles may have a lower Y-score than some bottles of borosilicate glass. Accelerated testing to investigate the storage life of solutions in bottles is feasible. However, the results must be interpreted very cautiously. Flakes occur through disintegration of a thin skin on the glass surface, often after blistering. The alkali content of the inner surface of an untreated glass bottle may be considerably higher than that inside the mass. In order to determine the resistance of a bottle, therefore, both the Y-score and the P-score must be known. (Author)

Rakina, V. P., Markevich, E. P., and Voskresenskaya, S. K.
TAR MAGNESITE REFRACTORIES AS LINING MATERIALS OF CONVERTERS WITH AN OXYGEN BLOWER (Magnezitovyi Ogneupor na Smolyanoi Svyazke dlya Futerovki Konverterov s Kislorodnoi Produvkoi). [1963] 17p. (figs. tables omitted) 8 refs.
Order from OTS or SLA $1.60 63-18004

Trans. of Ogneupory (USSR) 1961 [v. 26] no. 4, p. 185-193.

DESCRIPTORS: *Tar, *Magnesium compounds, *Carbonates, *Refractory materials, Furnaces, Oxygen, Blowers.

Tar-magnesite products have a sufficiently high density and mechanical strength (unburnt as well as after coking) and are distinguished by their high deformation temperature under a load, an increased strength at high temperatures, a relative stability of volume, a heightened thermal stability and heat conductivity and the ability to tolerate exposure to air without deterioration in characteristics. On the basis of the face of used normal magnesite brick, the production of magnesite-carbon bricks, burnt lump Satco magnesite and large-grained magnesite metallurgical powders is feasible. A preliminary testing of magnesite-carbon brick demonstrated the expediency of its further production and use in the lining of converters. In order to use this brick, it is first of all necessary to work out a special process for heating and preparing the lining before the start of the campaign in order to avoid burning out of the compound. (Author)

Samsonov, G. V. and Neshpor, V. S.
CERTAIN THEORETICAL PREREQUISITES ON THE CONSTRUCTION OF METAL-LIKE REFRACTORIES. 23 Apr 63 [14]p. 13 refs. FTD-TT-62-1841.
Order from OTS or SLA $1.60 63-19417

Unedited rough draft trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1958, v. 1, no. 8, p. 30-38.

DESCRIPTORS: *Refractory materials, *Heat resistant metals and alloys, *Carbides, *Borides, Silicides, Nitrides, Construction, *Crystal structure, Elasticity, Brittleness, Thermal stresses, Hardness, Phase studies, Thermal expansion.

In this report are discussed the principle possibilities of preparing heat resistant alloys. It is pointed out in particular, that for effective utilization of metal-like

compounds in role of refractory materials is necessary to obtain compounds possessing not too high forces of interatomic reaction and at the same time a very great mass of the structural complex, which will increase the ability of these substances toward relaxation of elastic stresses, reduce their brittleness and increase resistance to thermal impact. (Author)

Steinhoff, Eduard.
INVESTIGATIONS ON THE CAUSES OF THE DESTRUCTION OF CHAMBER CHECKER BRICKS IN GLASSMELTING FURNACES [Untersuchungen über die Ursachen der Zerstörung von Kammergittersteinen in Glasschmelzöfen]. [1963] 21p. (figs. omitted) 6 refs.
Order from SLA $2.60 63-14034

Trans. of Glastechnische Berichte (West Germany) 1955, v. 28 [no. 7] p. 265-272.
Also available from SLA $3.60 as 62-18207 [1962] [31]p. (foreign text included).

DESCRIPTORS: *Glass, Melting, Furnaces, *Brick, Magnesite, Degradation, Refractory materials.

Fuels, Lubricants, and Hydraulic Fluids

DIESEL FUEL. [1963] 4p.
Order from OTS or SLA $1.10 63-16049

Trans. of German patent 673,139, to Standard Oil Development Co., 23 June 34.

DESCRIPTORS: *Fuel oil, Diesel engines, *Fuel additives, Chlorination, Oxidation.

The invention invloves diesel fuel from gas oil or kerosene, characterized by the presence of a small content of high molecular organic oil-soluble acids or esters, and , if necessary, small amounts of halogen-or-sulfur-containing compounds and/or metal compounds, particular lead compounds. The process for the preparation of the Diesel fuel is characterized by the formation of the additive in the fuel itself by oxidation or chlorination. (Author)

THE PREPARATION AND EFFECTS OF COLLOIDAL LEAD IN GASOLINE. 30 Nov 48, 2p. 1 ref.
Order from SLA or SLA $1.10 63-10968

Trans. from unidentified German mono. pub. by I. G. Farbenindustrie A.G., Griesheim, n.d. (PB-70493B).

DESCRIPTORS: *Fuel additives, Antiknock, *Lead, *Colloids, Preparation, Electrolytic cells.

SODIUM INVESTIGATION. 23 Sep 48 [1]p.
Order from OTS or SLA $1.10 63-10963

Trans. from unidentified German mono. pub. by I. G. Farbenindustrie A.G., Frankfurt a.M., n.d. (PB-73504D).

DESCRIPTORS: *Sodium, Electrolysis, *Electrolytic cells, Polarization, Sodium compounds, Hydrides, Hydroxides, Oxides.

Ernst, H.
CONCERNING THE TESTING OF DIESEL FUELS. [1963] [23]p. (3 figs. omitted) 15 refs.
Order from SLA $2.60 63-14278

Trans. of [ATZ] Automobiltechnische Zeitschrift (Germany) 1939, v. 42, no. 8, p. 213-221.

DESCRIPTORS: *Fuel oil, Diesel engines, Test methods, Combustion, Ignition lag, Antiknock.

The basic considerations governing a choice of possible test methods for diesel fuels are discussed. In evaluating the fuels by engine tests, the processes with variable compression and with variable ignition lag were used.

Ogibalov, P. M. and Sentyurin, G. G.
VIEILLISSEMENT DES HUILES DE MACHINE SOUMISES À UNE COMPRESSION ÉLEVÉS DE COURTE DURÉE (O starenii tekhnicheskikh masel. Podvergnutykh szhatiyu kratkovremennym vysokim davleniem) (Aging of Lubricating Oil Subjected to High Compression of Short Duration). 5p. (foreign text included) 4 refs. FR-1531.
Order from OTS, ETC or CNRS $0.80 62-26476

Trans. in French of Izvestiya Vysshikh Uchebnykh Zavedenii. Neft' i Gaz (USSR) 1961, v. 4, no. 2, p. 65-67.
Another trans. is available in English from ATS $5.00 as ATS-27N55R [1961] 4p.

DESCRIPTORS: *Lubricants, *High pressure research, Chemical properties, Physical properties, Oils.

Thiemann, A. E.
ABOUT FUEL ADDITION COMPOUNDS FOR DIESEL FUELS. [1963] [4]p. (figs. tables omitted).
Order from SLA $1.10 63-14286

Trans. of [ATZ] Automobiltechnische Zeitschrift (Germany) 1942, v. 45, p. 454-457.

DESCRIPTORS: *Fuel oil, *Fuel additives, Ketones, Peroxides, Aldehydes, Acetones, Methyl radicals, Ethyl radicals, Propyl radicals, Alcohols, Ignition, Ignition lag.

Gas oils with high cetane number gave no higher efficiency than gas oils with low cetane number, but they have a smaller ignition delay and lower rate of pressure increase, and they give a smoother engine performance over the whole load range. Greater speeds of the engine and greater charge pressure give a smoother engine performance and permit the appli-

cation of gas oils lower cetane number. Ignition promotors decrease the ignition delay and the rate of pressure increase, and allow smoother engine performance. An increase of the engine efficiency generally does not occur; upon the addition of 4% tetra nitro methane an efficiency increase of less than 3% was observed. Ignition promotors reduce the ignition delay, but they do not accelerate the combustion, which is therefore not shortened by their use. Therefore, the expansion ratio is not increased and no larger amount of fuel may be injected or burned. In the case of alcohol-gas oil mixtures, the efficiency decreased with increasing alcohol content. With separate alcohol and gas oil injection and in the case of a great increase in the quantity injected, a small increase in efficiency of less than 4% could be measured. Alcohol increases ignition delay, the pressure rise, and the roughness of the engine performance. (Author)

Volkenstein, M. V. and Shorygin, P. P.
ANALYSIS OF GASOLINE BY THE RAMAN EFFECT, II. [1963] [18]p. 12 refs.
Order from OTS or SLA $1.60 63-16025

Trans. of [Zhurnal Fizicheskoi Khimii] (USSR) 1939, v. 13, p. 1512-1522.

DESCRIPTORS: *Gasoline, Chemical analysis, *Raman spectroscopy.

Leather and Textiles

NITROGENOUS CONDENSATION PRODUCTS, WATER-SOLUBLE AND POSSESSING EXCELLENT TANNING AND FILLING PROPERTIES, AND TANNING PROCESS INVOLVING THE USE OF THESE PRODUCTS. [1963] 4p.
Order from OTS or SLA $1.10 63-16013

Trans. of French patent 694,257, Apr 30, by I. G. [Farbenindustrie].

DESCRIPTORS: *Leather, Processing, *Nitrogen compounds, Phenols, Benzenes, Vegetable oils, Urea, Aliphatic compounds, Aldehydes.

ZINC-CELLULOSE XANTHATION DURING SPINNING VISCOSE INTO $ZnSO_4$-CONTAINING BATHS. [1962] [6]p. 9 refs.
Order from SLA $1.10 63-10804

Trans. of Faserforschung und Textiltechnik (Germany) 1961, v. 12, no. 1, p. 29-30.

DESCRIPTORS: Zinc, Cellulose, *Viscose, Processing, Manufacturing methods, Xanthic acid, Sulfates.

Ershov, B. Ya. and Ptukha, P. E.
EXPERIENCIA OBTENIDA EN LA ELABORACION DEL YUTE EN LA FABRICACION DE SACOS (Opyt Pererabotki Dzhuta v Meshochnom Proizvodstve) (Experience Obtained in Jute Elaboration for Sack Manufacture). 9p. CID: 62-207.
Order from OTS, ETC or CID $0.80 62-29207

Trans. in Spanish of Tekstil'naya Promyshlennost' (USSR) 1956, v. 16, no. 10, p. 53-54.

DESCRIPTORS: Fibers (Natural), *Bags (Containers), Textiles.

Grishchenko, A. Z., Bezoosyak, U. L. and others.
AUTOMATIC REGULATION OF LEVELS IN EQUIPMENT FOR THE CONTINUOUS POLYMERIZATION OF CAPROLACTAM. Feb 62 [5]p.
Order from OTS or SLA $1.10 62-20028

Trans. of Khimicheskie Volokna (USSR) 1961, no. 2, p. 23-24.

DESCRIPTORS: *Fibers (Synthetic), Polymerization, Lactams, Industrial equipment, Automatic, Control.

Iwama, Seiya and Okamoto, Katsumi.
SURFACE TREATMENT METHOD FOR POLYOLEFIN SYSTEM SYNTHETIC RESIN FIBER PRODUCTS. [1963] 5p.
Order from OTS or SLA $1.10 63-16402

Trans. of [Japanese] official announcement of application for patent 37 Showa (1962) 5,823, official announcement 25 June 62, appl. 26 Dec 58, patent application 33 Showa (1958) 37,426, by Hirata Spinning Co.

DESCRIPTORS: *Fibers (Synthetic), *Polyethylene plastics, Surfaces, *Adhesives, *Coatings, *Chlorosulfonic acid, Vapors, *Dyes.

The invention deals with a treatment method which is characterized by the fact that nascent gas which evolves from chlorosulfonic acid is caused to contact, at room temperature, fibers, woven materials, or other fibrous products which are made by using polyolefin system synthetic resins, such as polyethylene, as the raw material, thereby to impart to the surface affinity and adhesiveness toward various types of dyestuffs, pigments, printing inks, adhesive agents, etc., by treatment of an extremely short duration, enabling coloring or printing to brilliant coloration and also adhesion to other materials and, at the same time, increasing the coefficient of friction, permitting effective prevention of mesh shifting [or slippage], mesh reversal etc., of, for example, laces and fish-nets; and, when treated for a longer period of time, thereby cause the substance to automatically present a brown color and to develop weather-resistance. (Author)

Kotlyarevskii, Z. N.
ROTARY PLANT FOR FINISHING VISCOSE RAYON IN CAKES. 11 Jan 63 [5]p.
Order from OTS or SLA $1.10 63-10843

Trans. of Russian patent 141,583, gr. 131, cl. 29a 6, appl. filed 24 Nov 60, 686840/28-12 (pub. in #Byulleten' Izobretenii (USSR) 1961, no. 9)

DESCRIPTORS: *Viscose, *Finishes, Rayon, Industrial plants, Rotation, Textiles, Fibers (Synthetic)

Limanauskas, P. V.
THE CONSTRUCTION OF CREELS (CRITICAL SURVEY) tr. by I. Gawronska. 8 May 62, 4p. Courtaulds Ltd. Misc. Lit. 3483; [DSIR] NLL M. 3788.
Order from OTS or SLA $1.10 63-19773

Trans. of Tekstil['naya] Prom[yshlennost'] (USSR) 1961, v. 21, no. 8, p. 48-50.

DESCRIPTORS: Textiles, Production, *Fibers, Handling, *Industrial equipment, Construction.

Malafeev, G. A.
INFLUENCE OF THE CHIMNEY BLOWING CONDITIONS ON THE QUALITY OF CAPRON FILAMENT. [1963] 9p.
Order from ATS $9.50 ATS-13Q70R

Trans. of Khim[icheskie] Volokna (USSR) 1961, no. 3, p. 63-67.

DESCRIPTORS: *Filaments, *Fibers (Synthetic).

Nakanishi, Ryoji.
METHOD OF MANUFACTURING DENATURALIZED POLYESTER. July 63, 6p. (figs. omitted).
Order from SA $16.00 SA Code-P-144

Trans. of published Japanese patent 13348/1962, cl. 26-D-6, appl. no. 31255/1960 [filed] 16 July 60, pub. 7 Sep 62, by Toyo Rayon Co., Ltd.

DESCRIPTORS: *Fibers (Synthetic), *Polyester plastics, Manufacturing methods, Methyl radicals, *Phthalates, *Ethylenes, *Glycols, Polymerization, Sulfuric acid

Pakshver, A. B.
POLYACRYLONITRILE MAN-MADE FIBRES, tr. by I. Gawronska. 14 Mar 62, 20p. 29 refs. Courtaulds Ltd. Misc. Lit. 3457; [DSIR] NLL M. 3724.
Order from OTS or SLA $1.60 63-19827

Trans. of Khim[icheskie] Volok[na] (USSR) 1959, no. 5, p. 3-12.

DESCRIPTORS: *Fibers (Synthetic), Polymers, *Acrylonitriles.

Topics include: Raw materials; polymerization of acrylonitrile; the preparation and properties of the spinning solution; dry spinning of polyacrylonitrile fibres; spinning from dimethylformamide solution into baths composed of water and dimethylformamide; spinning from solutions in dimethylformamide, using organic baths; spinning from other solvents in other spinning baths; the after-treatment of polyacrylonitrile fibre; thermal treatment of polyacrylonitrile fibres; and brief notes on the dyeing and textile processing of polyacrylonitrile fibres.

Rassolov, O. P. and Pakshver, A. B.
CONSTRUCTION OF APPARATUS FOR THE CONTINUOUS XANTHATION OF ALKALI CELLULOSE, tr. by I. Gawronska. 9 July 62 [8]p. (figs. omitted) 14 refs. Courtaulds Ltd. Misc. Lit. 3508; [DSIR] NLL M. 3895.
Order from OTS or SLA $1.10 63-19946

Trans. of Khim[icheskie] Volok[na] (USSR) 1961, no. 6, p. 33-35.

DESCRIPTORS: *Viscose, *Rayon, *Cellulose xanthates, Production, Sodium compounds, Hydroxides, Carbon compounds, Sulfides, *Industrial equipment, Design, Operation.

An apparatus for the continuous xanthation of alkali cellulslose and its operations are described. The process of continuous xanthation of alkal cellulose was investigated in a pilot plant, reproducible results were obtained and the essential technical conditions were determined. (Author)

Rossner, Ernest; Lehmann, Walter, and Losslinger, Karl.
PROCESS FOR THE PREPARATION OF QUICK-VISCOSE. [1962] 4p.
Order from OTS or SLA $1.10 63-10796

Trans. of East German patent 13,586, cl. 29B, gr. 3/20, file WP 29b/34832, pat. from 2 Feb 55, issued 26 July 57.

DESCRIPTORS: *Viscose, Preparation, Manufacturing methods.

Sakka, S.
EFFET DU RECHAUFFEMENT SUR LA RÉSISTANCE MÉCANIQUE DES FIBRES DE VERRE (Effects of Reheating on the Strength of Glass Fibers). 6p. 7 refs. FX-1101.
Order from OTS, ETC or CNRS $0.80 62-26465

Trans. in French of Yogyo Kyokaishi (Japan) 1957, v. 65, p. 190ff.

DESCRIPTORS: *Glass textiles, Mechanical properties, Heating, *Fluorides, Hydrogen compounds, Tensiometers.

Szidon, V.
PROCESS FOR THE MANUFACTURE OF A PRODUCT TO REPLACE NATURAL EGG YOLK IN TANNING. [1963] [2]p. 2 refs.
Order from OTS or SLA $1.10 63-16007

Trans. of French patent 640,535, n.d.

DESCRIPTORS: *Leather, Processing, *Colloids, Oils, Sulfonates, Lichens, Carbohydrates, Glycerols, Eggs, Aluminum, Soaps, Vegetable oils.

Wollhaf, A.
MODIFIED TEST FOR NYLON VS. PERLON, USING SESOLVAN NK. [1962] 2p. (figs. omitted).
Order from SLA $1.10 63-10035

Trans. of Melliand Textilberichte (West Germany) [1954] v. 35, no. 5, p. 533.

DESCRIPTORS: *Nylon, Fibers (Synthetic), Test methods.

Zachmann, Hans Gerhard and Schmidt, Günther Friedrich.
MELT AND CRYSTALLIZATION PHENOMENA OF MACROMOLECULAR SUBSTANCES. VI RESULTS OF SMALL AND WIDE ANGLE X-RAY STUDIES OF POLYGLYCOLTEREPHTHALATE (TERYLENE). [1963] 25p. 15 refs.
Order from SLA $2.60 63-16565

Trans. of Makromolekulare Chemie (Switzerland) 1962, v. 52, p. 23-35.

DESCRIPTORS: *Fibers (Synthetic), *Polyester plastics, *Dacron, Glycols, *Phthalates, Ethylenes, Melting, Crystallization, Molecular structure, X-ray diffraction analysis.

X-ray investigations show that the small angle period decreases with increasing crystallinity in the course of secondary crystallization. When a sample previously crystallized at 140°C. is heated to a higher temperature, the small angle period firstly increases and thereafter decreases during the following new crystallization. The interpretation of these experimental results is discussed. It is shown by X-ray wide angle scattering that the order in chain direction is not improved with increasing crystallinity during isothermal crystallization. This order obviously depends only on the temperature of crystallization. After partial melting followed by a crystallization at a lower temperature the molecular order -- particularly in chain direction -- becomes less perfect. (Author) (See also 61-10989)

Paints and Finishes

Moiseev, E. V.
CHARGING SOLID PARTICLES AND DROPS IN AN ELECTRIC FIELD. 14 Mar 63 [9]p. 4 refs.
FTD-TT-62-1830. AD-402 469
Order from OTS or SLA $1.10 63-19338

Unedited rough draft rans. of Referativnyi Zhurnal. Khimiya (USSR) 1961, no. 15, p. 55-57.

DESCRIPTORS: *Paint applicators, *Paints, Drops, *Electrical properties, Atomization.

The electrical charge of solid particles or drops of paint in contact charging is achieved as a result of raising the voltage of the power source, of using material with high electrical conductance, of sharp rounding of the atomizer, and of decreasing the thickness of the layer of material on the edge of the electrode. Since certain variables simultaneously influence the size of the charge it is necessary strictly to maintain the technological regime according to the voltage, paint flow rate, and electrical parameters of the material. (Author)

Rechmann, H.
PARTICLE-SIZE DISTRIBUTION IN TITANIUM DIOXIDE PIGMENT SUSPENSIONS. Aug 63, 12p.
Order from ES $10.00

Trans. of Farbe und Lack (West Germany) 1962, v. 68 [no. 1] p. 23-31.
Another trans. is available from TTIS $36.00 as TTIS-2421, Oct 62, 3500 words.

DESCRIPTORS: *Pigments, *Titanium compounds, Dioxides, Colloids, Particles.

Scacciati, G. and Gondi, P.
STUDY OF THE PRODUCTION CONDITIONS AND PROPERTIES OF ZINC OXIDE AS PIGMENT. [1963] 17p. (figs. omitted) 17 refs.
Order from SLA $1.60 63-16473

Trans. of la Chimica e l'Industria (Italy) 1957, v. 39, p. 832-841.

DESCRIPTORS: *Zinc compounds, *Oxides, *Pigments, Industrial production, Physical properties, Air, Vapors, Calcination, Anisotropy, Crystals.

The effect of the ratio air/zinc vapors on the physical characteristics of the zinc oxide obtained according to the French process was studied in a pilot plant. The conditions were varied so as to obtain a range of particles of dimensions of from 0.6 to 1.7 microns and of nodular and stellar-acicular shapes. The effect of the ratio "air/zinc vapors" was found to be expressible in terms of nucleation and growth of the crystals. A high excess of air causes strong nucleation and therefore small particles without high anisotropies, a slight excess of oxygen favors the growth phase, with large and anisotropic particles. The effect of the treatment in the "calcination chamber" was also examined. Such treatment of the oxide of the purest zinc (99.999%) at 750° C. improves the whiteness of the pigment. Finally, the fact is pointed out that the apparent densities of the various types of pigments produced are lower for the stellar particles of large dimensions. (Author)

Photographic Materials

FIAT MICROFILM REEL C-132: WORK OF DR. FRANKE. [1961] 1954, 8p.
Order from SLA $1.10 62-10359

Trans. of unidentified mono. (report) n.p., n.d.

DESCRIPTORS: *Microfilm, *Azo compounds, Light, Sensitivity, Colors.

PHOTOGRAPHIC FILM. [1963] [4]p. 1 ref.
Order from OTS or SLA $1.10 63-16322

Trans. of Belgian patent 617,581, by Gevaert Photo-Producten N. V. 1962.

DESCRIPTORS: *Photographic film, *Photographic emulsions.

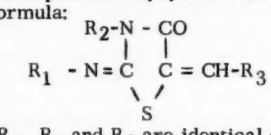
A photographic stripper film is described. It consists mainly of a layer of water-repellent cellulose ester, a layer based on ethyl cellulose and cellulose nitrate, an adhesive layer and a light-sensitive silver halide emulsion layer. The proportion of ethyl cellulose to cellulose nitrate lies between the limits of 0.5-9.5 and 5-5.

PHOTOSENSITIVE MATERIAL. [1963] [24]p.
Order from OTS or SLA $2.60 63-16319

Trans. of French patent 1,302,340, application 875,072, filed 5 Oct 61, delivered 16 July 62, by Kalle AG (German convention: 8 Oct 60 as K 41,850) (pub. in Bull[etin] Off[iciel] de la Propriété Industrielle (France) 1962, no. 34).

DESCRIPTORS: *Photographic emulsions, Photographic chemicals, Thio radicals, Azo radicals, Ketones, Synthesis (Chemistry), Photographic plates, Manufacturing methods.

The invention concerns: (1) A photosensitive material for the photomechanical production of negatives, whose material consists essentially of a support and of a sensitive layer carried by said support, and is characterized in that the photosensitive layer consists completely or in part of one or several thiazolidones substituted in positions 2, 3, 5 and having the following general formula:



in which R_1, R_2 and R_3 are identical or different hydrocarbon radicals which may possibly contain heteroatoms and which can possibly be substituted. (2) A method for making the photosensitive material according to 1, characterized in that the compounds that present the formula mentioned in 1 are contained in the photosensitive layer, together with resins that are soluble in alkalis or in water. (Author)

PROCEDURE FOR RAPID PHOTOGRAPHIC REPRODUCTION. [1963] 2p.
Order from OTS or SLA $1.10 63-16323

Trans. of French patent 1,206,359, Etablissements Bauchet & C^{ie}, appl. 12 Aug 58, issued 24 Aug 59, pub. 9 Feb 60.

DESCRIPTORS: Reproduction, *Photographic chemicals, Photographic processors.

The invention has for its object a rapid photographic reproduction procedure. It utilizes, for the stabilization of silver salts, products which do not attack or attack only slightly the developed metallic silver. It utilizes the acetylthiourea, the condensation product of thiourea with oxalic acid, quarternary mercaptobenzothiazoles such as 2-mercaptobenzothiazole-di-(methyl sulfate). No matter which stabilizing product is used, ammonium thiocyanate or other, one forms with the stabilizing excess a complex which makes it harmful toward the developed metallic silver. One complexes the excess of the stabilizer (ammonium thiocyanate or other) by the salt or the oxide of a metal with which it forms a little dissociated complex. One utilizes salts or nickel, cobalt or chromimum and zinc oxide.

PROCESS FOR REMOVING PHOTOGRAPHIC LAYERS FROM NITROCELLULOSE FILMS WHICH ARE ATTACHED BY ALBUMINOUS PREPARATIONS OF SOME KIND. 20 Aug 62, 2p.
Order from OTS or SLA $1.10 62-20065

Trans. of German patent 634,305, filed 18 July 34, issued 24 Aug 36, by I. G. Farbenindustrie A.G.

DESCRIPTORS: *Photographic film, *Nitrocellulose, Separation, Attachment, Albuminoids, Albumins, *Photographic emulsions.

Eastman, D. R., Urbach, F. and others.
NEW METHOD FOR THE ELECTROLYTIC RECORDING OF AN IMAGE AND PRODUCT FOR CARRYING OUT THIS METHOD. [1962] [20]p.
Order from OTS or SLA $1.60 62-20013

Trans. of Belgian patent 606,003, filed 11 July 61, U.S. appl. no. 45,959, 28 July 60 and no. 46,034, 28 July 60.

DESCRIPTORS: *Photographic images, Photographic recording media, Electrolytes, Photochemistry, *Electrophotography, Photoconductivity.

The invention concerns (1) an effective method for the electrolytic recording of images, which should be independent of the reaction that produces the specific dye or of the reaction of electrolytic plating, but which should permit the utilization of a large number of dyes or pigments; (2) such a method of electrolytic recording that can be used in photoconductography; (3) a method of electrolytic recording which would allow to obtain negative or positive images; (4) a method of electrolytic recording that gives images that can be used as printing matrices in methods of discharge of dyes or in lithographic methods; a photoconductographic method which would allow the preparation of several prints from one single exposure. (Author)

Ikeda, T., Noguchi, K., and Miura, K.
HALFTONE IMAGES MADE WITH A CONTACT SCREEN. Pt. 3 of Tone Reproduction [by] Electrophotography. [1963] 13p.
Order from ATS $12.50 ATS-91Q69J

Trans. of Denshi Shashin (Japan) 1962, v. 4, no. 2, p. 5-12.

DESCRIPTORS: *Electrophotography, *Photographic images, Optical images, Printing, Reproduction, Viewing screens, Display systems.

Nebylitskii, E.
MOTION PICTURE FILM "VCh". [1963] 3p.
Order from OTS or SLA $1.10 63-18059

Trans. of Sovetskoe Foto (USSR) 1962, v. 22, no. 7, p. 39.

DESCRIPTORS: *Motion picture, Film, Motion picture photography.

Pröpstl, Georg.
METHOD FOR THE PREPARATION OF AN IMAGE. [1962] 3p.
Order from OTS or SLA $1.10 62-20420

Trans. of German patent 908,978, cl. 15 k, group 7 03, pub. 9 May 56, filed 26 Jan 51, pub. for opposition 20 Aug 53, notice of grant pub. 4 Mar 54, by Robert Bosch, G.m.b.H.

DESCRIPTORS: *Photographic images, Preparation, Photographic chemicals, Decomposition.

The purpose of the invention is the utilization of the decomposition process, occurring in the case of extremely thin layers, for making an image. (Author)

Rath, W. and North, G.
PROCESS FOR THE PREPARATION OF PHOTOGRAPHIC CONTRASTS AND IMAGES. 14 Aug 62, 2p.
Order from OTS or SLA $1.10 62-20066

Trans. of German patent 656,956, filed 20 Feb 36, issued 17 Mar 38, by Porzellanfabrik Kahla (addtion to German patent 634,306).

DESCRIPTORS: *Photographic images, Preparation, Photographic plates, Photochemistry, Photosensitivity.

The invention concerns a process for the production of photographic contrasts and images according to patent 634,306, characterized in that the light-sensitive surface of the image carrier, which consists of a TiO_2-containing ceramic composition, is coated with a starch-containing KI solution before exposure. (Author)

Takamatsu, Osamu.
ELECTROSTATIC PHOTOGRAPH DEVELOPING METHOD. 4p. (figs. omitted).
Order from OTS or SLA $1.10 63-16446

Trans. of Japanese patent publication SHO 37-14,798, pub. 21 Sep 62, (application SHO 35-29,160, 22 June 60) by Riken Kogaku Kogyo Co.

DESCRIPTORS: *Electrophotography, Photographic images, Photographic paper, Semiconductors, Photographic processors, Magnets.

The invention involves an electrostatic photograph developing method which is characterized in that there are provided, and arranged in the order of, permanent magnets which are arranged with opposite polarities positioned one after the other, a nonmagnetic plate, a toner, and an electrostatic photograph printing paper; said magnets, nonmagnetic plate, and printing paper are relatively moved in such a manner that the particles of the toner move, while rotating on their axis, in the direction reverse to the direction in which these magnets travel relative to the nonmagnetic plate, and that the toner particles fluff up, at the pole parts of said magnets, so as to develop a latent image by gently brushing the surface of the electrostatic photograph printing paper. (Author)

Tokumoto, Shinichi.
ELECTROPHOTOGRAPHY. [1963] 16p. (figs. omitted).
Order from OTS or SLA $1.60 63-16449

Trans. of Japanese patent publication SHO 37-15,877, pub. 6 Oct 62, (application SHO 35-21,910, 19 Apr 60) by Sony Corp.

DESCRIPTORS: *Electrophotography, Photographic chemicals, *Semiconductor devices, Electricity, Photographic images.

An electrophotographic method which is characterized in that alterants which are either insolubly fixed or selectively discolored by a chemical acting thereon are directly or indirectly arranged on a photoconductive semiconductor, which converts a light image into an image of electric charge; then the acting chemical is adsorbed in proportion to the intensity of the electric charge of the charged image, in such a manner that the chemical acts in different degrees on the alterants in different places so as to produce, through or not through a transfer process, a color image in various coloring or discoloring degrees. (Author)

Tokumoto, Shinichi and Kikuchi, Tatsuro.
MAGNETIC IMAGE REPRODUCING METHOD. [1963] 4p.
Order from OTS or SLA $1.10 63-16444

Trans. of Japanese patent publication SHO 37-16,098, pub. 9 Oct 62 (application SHO 34-4,019, 7 Feb 59) by Sony Corp.

DESCRIPTORS: *Photographic recording systems, *Semiconductor devices, *Ferromagnetic materials, *Photographic images, Magnetic properties, Photosensitivity, Reproduction, Magnetic recording systems,

The invention involves a method of reproducing magnetic images wherein an electric-charge surface which consists of a photosensitive semiconductor is charged with electricity and is exposed to light through an optical system so as to focus an image thereon, or in such a manner that the intensity of light applied to each spot on the electrically charged surface varies in proportion to the brightness of each spot in the original image; then a magnetic image is formed on the electrically charged surface by electrostatically adsorbing a ferromagnetic substance at each spot thereon in various quantities in accordance with the intensity of the residual electric charge which is diferrentiated in places through the exposure to light; the ferromagnetic substance thus adsorbed on the electrically charged surface is either fixed as it is or transferred onto another base to be fixed thereon; the fixed ferromagnetic substance is magnetized before an additional ferromagnetic substance is magnetically adsorbed thereon, so that a duplicate image is obtained by transferring the additionally adsorbed ferromagnetic substance onto a separate base, as detailed in the foregoing description of the invention. (Author)

Plastics

NEW PROCESS FOR OBTAINING SHAPED OBJECTS BASED ON POLYVINYL ALCOHOL. [1963] 7p.
Order from OTS or SLA $1.10 63-16424

Trans. of French patent 1,299,604, filed 12 June 61, granted 18 June 62, by Rhône-Poulenc S. A.

DESCRIPTORS: *Plastic films, *Fibers (Synthetic), Manufacturing methods, *Polyvinyl alcohol, Molding, Vinyl radicals, *Acetates, Alcohols, Gels, Hydrolysis.

A process for preparing shaped objects based on polyvinyl alcohol is described. An alcoholic solution of a homopolymer or copolymer of saponifiable vinyl esters, particularly polyvinyl acetate, in methanol is shaped. An alcoholysis catalyst is added to this solution. The mixture thus formed is maintained in shape until gelling is complete, and the gel thus obtained is dried.

Alishoev, V. R., Guryanova, V. V. and others.
NON-ADDITIVE EFFECT IN THE STABILIZATION OF POLYFORMALDEHYDE BY THE ADDITION OF POLYAMIDES AND ANTIOXIDANTS. 11 Apr 63 [2]p. 4 refs.
Order from OTS or SLA $1.10 63-14715

Partial trans. (summary and refs.) of Vysokomolekulyarnye Soedineniya (USSR) 1962, v. 4, no. 12, p. 1887.

DESCRIPTORS: *Acetyl plastics, Formaldehyde, Polymers, Stabilization, Additives, *Polyamide plastics, *Antioxidants.

A description is given of the influence of the addition of different polyamides and antioxidants on the evolution of gas during the thermo-oxidative decomposition of polyformaldehyde. The addition of both polyamides and antioxidants decreases the evolution of gas in the thermal oxidation of polyformaldehyde. A diagram shows the curves for the evolution of gas at 200° and an oxygen pressure of 200 mm. Hg during the oxidation of polyformaldehyde. (Author)

Armitage, John Bryan.
POLYOLEFINE COMPOSITION. July 63, 4p.
Order from SA $16.00 SA Code-P-165

Trans. of published Japanese patent 8179/1962, cl. 25 H 311, 25 H 09, 25 A 13, appl. no. 39380/62 filed 22 Sep 60, pub. 13 July 62, by E. I. du Pont de Nemours & Co., U. S. A. (Priority claimed: 22 Sep 59, U. S. A.).

DESCRIPTORS: *Polyethylene plastics, *Ultraviolet filters, Production, *Ethylenes, *Propenes, *Butenes, Copolymerization, Additives, *Titanium compounds, Dioxides

Batzer, H[ans] and Nisch, A[nton].
[INVESTIGATIONS TO EXPLAIN THE STRUCTURE OF POLYVINYL CHLORIDE]: REDUCTIONS IN HIGH-MOLECULAR HYDROCARBONS [Untersuchungen zur Strukturaufklarung des Polyvinylchlorides]. [1963] 1p. 1 ref..
Order from SLA $1.10 63-14195

Partial trans. (p. 134) of Makromolekulare Chemie (Switzerland) 1957, v. 12, no. 1/2, p. 131-146.
A trans. of p. 131-146 is available from SLA mi$2.40, ph$3.30 as 59-15945 [1959] [19]p.

DESCRIPTORS: *Hydrocarbons, Reduction, Chlorine, *Polyethylene plastics, *Polyvinyl chloride, Production.

If the chlorine content of the reduction product sinks below 10 %, the resulting chloro-hydrocarbons become insoluble in tetrahydrofurane; on this account, decaline is added as a solvent. Since the resulting polyethylene-like product is soluble only at higher temperatures, the tetrahydrofurane would also be substituted by higher-boiling dioxane. It is impossible to work in pure decaline since lithium aluminum hydride is not soluble therein and a heterogeneous reduction would proceed too slowly. After 15 day heating with a reflux, a chlorine-free product with a great excess in lithium aluminum hydride would be obtained. The softening point of this hydrocarbon lay, in the case of reduction under pure nitrogen, at 118°C.; if, during the reduction, air was not excluded, at about 110° C. Comparisons of solubility and softening point between high-pressure polyethylene and Ziegler polyethylene show that the product obtained from polyvinyl chloride by reduction under nitrogen has properties lying between those of the two kinds of polyethylene mentioned. No difference could be detected in the reduction products from emulsion polymerization and suspension polymerization. The element analyses of the final product gave, upon reduction under nitrogen, the values for paraffin. (Report quoted in its entirety)

Boryniec, Atanazy and Laszkiewicz, Bogumit.
SYNTHESIS OF ORGANOPHOSPHORUS COPOLYMERS AND THEIR PROPERTIES. [1963] 2p. 3 refs.
Order from SLA $1.10 63-16594

Trans. of Roczniki Chemii (Poland) 1962, v. 36, p. 365-366.

DESCRIPTORS: Synthesis (Chemistry), Organic compounds, Phosphorus compounds, *Polymers, *Phenyl radicals, *Chlorides, *Phosphines, Styrenes, Vinyl radicals, Acetates, Ethyl radicals, Methyl radicals, Acrylic resins, *Plastics, Block polymers, Copolymerization.

An investigation was made of the possibilities of the synthesis of copolymers of phenyldichlorophosphine with vinyl acetate or with ethyl methacrylate, and of copolymers with styrene or methyl methacrylate. Copolymerization was carried out using the block method with benzoyl peroxide and Porophor N as initiators, in the temperature range of 50-100°. The copolymers obtained differ considerably in physicochemical and mechanical properties from their ethenoid homopolymer counterparts, and are non inflammable provided a proper ratio of both components is maintained. (Extracted)

Ciampa, G.
THE CHARACTERIZATION OF POLYVINYL CHLORIDE BY ITS SOLUBILITY IN ACETON. [1963] 6p. (figs. tables omitted) 4 refs.
Order from SLA $1.10 63-14103

Trans. of Materie Plastiche (Italy) 1958, v. 24 [no. 5] p. 420-422.

DESCRIPTORS: *Polyvinyl chloride, Molecular weight, Viscosity, Determination, Solubility, *Acetones

The molecular weights and the K values of the whole polymers as a function of their percent soluble in acetone were plotted on a graph. In this homolog series of polyvinyl chloride, the percent of soluble matter decreases with increase in molecular weight. The ratio expressed in the graph is not universal in the sense that for a determined molecular weight there is a soluble percentage and vice versa so that soluble percent the necessarily corresponds to a single product of determined molecular weight. This relation is obviously involved with the kinetic scheme of polymerization in the sense that variations in conducting the polymerization may lead to polymers having the same average molecular weight values, but perhaps not having equal solubility amount in aceton. It is possible to construct a group of curves, each representing a homolog series of products obtained under similar conditions.

Breil, Franz, Kestel, Roland, and Martin, Heinz.
METHOD OF MANUFACTURING HIGH MOLECULAR POLYETHYLENES. July 63, 16p. 6 refs.
Order from SA $22.00 SA Code-P-146

Trans. of Japanese patent 233,609, cl. 26-B-11, appl. no. 2866/1955 filed 19 Jan 55, pub. 30 Mar 57 as 2045/1957, by Karl Ziegler (priority claimed: 19 Jan 54, 13 Dec 54, Germany).

DESCRIPTORS: *Polyethylene plastics, Manufacturing methods, Ethylenes, Polymerization, Metalorganic compounds, *Ziegler catalysts, *Aluminum compounds, Ethyl radicals, Methyl radicals, Alkoxy radicals, Phenyl radicals, Piperidines, Amines, Thio radicals, Lactams, Sulfonyl radicals, Phenols, Propyl radicals, Chlorides, Fluorides, Hydrides, Anhydrides, Ethyl ethers, Titanium compounds, Zirconium compounds, Chromium compounds, Uranium compounds

Buzagh, A., Udvarhelyi, Katharina, and Horkay, F.
FRACTIONATED COAGULATION OF PHENOL-FORMALDEHYDE RESINS WITH AQUEOUS ELECTROLYTIC SOLUTIONS. [1963] 23p. (figs. refs. omitted).
Order from SLA $2.60 63-16496

Trans. of Kolloid-Zeitschrift (West Germany) 1957, v. 154, no. 2, p. 130-141.

DESCRIPTORS: *Phenol-formaldehyde resins, *Phenolic plastics, *Acetyl plastics, Coagulation, Separation, Colloids, Water, Electrolytes.

Fractionated coagulation of phenol-formaldehyde resins dissolved in alcohol and dioxane with aqueous electrolytic solutions was studied. The separation of the resins from alcoholic solutions by means of aqueous electrolytic solutions took place under the formation of water and alcohol containing coacervates. By the addition of pure water originates only a resin emulsion. It was shown that in the coagulation of the alcoholic resin solutions with aqueous electrolytic solutions merely the water content of the systems and not the kind and concentration of the present electrolyte was decisive. The coagulation values, expressed in water concentration, do not depend upon the kind and the concentration of the electrolyte. There from results the advantage of the application of aqueous carbonic acid solutions in the fractionated coagulation of the alcoholic resin solutions. The dependence of the separated resin quantities upon the added precipitant quantity, that is the so-called precipitation curve was determined. The obtained molecular weights of single fractions show that with the increasing water content of the system the fractions with smaller molecular weights separate always less. The composition of the single coacervate isolated by fractionated coagulation was studied. The resin, alcohol and water content of the coacervates were determined and compared with the initial system. (Author)

Fukasawa, Yoshiski.
NON-NEWTONIAN FLOW OF POLYVINYL CHLORIDE AT HIGH TEMPERATURE. 28 June 62, 10p. (figs. tables omitted).
Order from SLA $1.10 63-14038

Trans. of Kogyo Kagaku Zasshi (Japan) 1960, v. 63, p. 459-564.

DESCRIPTORS: *Polyvinyl chloride, *Fluid flow, Viscosity, Molecular weight, Elasticity, Friction, Shear stresses, Heat of activation, *Plasticizers, Lubricants.

Flow character of PVC was measured by an extrusion capillary viscometer. The flow curves indicated considerable non-Newtonian character at lower temperatures. At temperatures above the melting point (206°C) of the PVC, the flow curves obeyed the Bueche-Harding equation, which has successfully explained the dependences on molecular weight and the amount of plasticizer used. (DOP). The activation energy of the flow was found to be 62 Kcal/mol, estimated from the viscosity η_0 at zero shear rate. The addition of plasticizer and of a small amount of lubricant decreased the activation energy. The ratios between η_0 and molecular weight, M_V, and between η_0 and amount of DOP (weight fraction = $1 - w^2$) may be expressed by the following equations, respectively,

$$\eta_0 (220^{\circ}C) = 7.38 \times 10^{-12} Mv^{3.4}$$

$$\log \eta_0 (220^{\circ}C) = 8.4\, w_2^{1/2} - 3.2$$

Pressure loss at the entrance of the capillary (final corrections), probably due to elasticity of the melted substance, elestic recovery of the flow material, effects of the stabilizer, plasticizer and lubricant, was examined at the critical shear rate. (Author)

Harowitz, Charles Lichenberg.
POLYMERS OF URETHANE, HAVING BETTER FIRE-PROOFING AND SELF-EXTINGUISHING PROPERTIES. [1963] 24p.
Order from OTS or SLA $2.60 63-16238

Trans. of unidentified Belgian patent application, 30 Dec 60, by Virginia-Carolina Chemical Corporation.

DESCRIPTORS: Polymers, *Isocyanate plastics, Heat resistant plastics.

The invention involves a process for the formation of a polyurethane, having fire-proofing properties, characterized in that a polyisocyanate is made to react with a mixture of a polyol and an organic phosphorous compound, whose molecule contains at least two atoms of active hydrogen, and in that the reactional product formed is then baked. One transforms into foam the reactional product of the polyisocyanate and the mixture of the polyol and the organic phosphorous compound, whose molecule contains at least two atoms of active hydrogen, and in that the foam product is then baked so as to form a cellular polyurathane. (Author)

Inaba, Yanosuke, Kimoto, Koji and others.
A PROCESS FOR THE CONTINUOUS POLYMERIZATION OF POLYUREA. July 63, 19p. (fig. omitted).
Order from SA $22.00 SA Code-P-134

Trans. of published Japanese patent 15050/1962, cl. 26-D-71, appl. no. 10165/1960 filed 20 Mar 60, pub. 25 Sep 62, by Toyo Koatsu Industries, Inc.

DESCRIPTORS: *Amino plastics, Production, *Urea, *Thiourea, *Amines, Polymerization, Condensation reactions

Kenyon, Leon Cliffore, Jr. and Koontz, John Dana.
PROCESS FOR CATALYTIC POLYMERIZATION OF OLEFINS. July 63, 25p. (figs. omitted).
Order from SA $28.00 SA Code-P-150

Trans. of published Japanese patent 5292/1960, cl. 26-B-11, appl. no. 14583/1957 filed 13 June 57, pub. 17 May 60, by Esso Research and Engineering Co., U. S. A. (priority claimed: 20 June 56, U. S. A.).

DESCRIPTORS: *Polyethylene plastics, Production, Alkenes, *Ethylenes, *Propenes, Polymerization, Catalysis, Metalorganic compounds, *Ziegler catalysts, *Aluminum compounds, Ethyl radicals, Halides, *Titanium compounds, Chlorides

Koppehele, H. Paul.
A METHOD AND APPARATUS FOR SIMULTANEOUS BIAXIAL STRETCHING OF FILM WITH A TENTERING MACHINE. July 63, 14p. (figs. omitted).
Order from SA $22.00 SA Code-P-133

Trans. of published Japanese patent 8188/1962, cl. 1, 2, 25-N-231.2, appl. no. 28711/1960 filed 20 June 60, pub. 13 July 62, by American Viscose Corp., U. S. A. (priority claimed: 12 Nov 59, U. S. A.).

DESCRIPTORS: *Plastic films, *Polyethylene plastics, Material forming, Machines, Design

Korostylev, B. N., and Kozlov, P. V.
ÉTUDE DES PROCESSUS DE RELAXATION DANS LES FILMS D'ÉTHERS DE CELLULOSE (Investigation of Relaxation Processes in Cellulose Ester Films). 8p. 8 refs.
Order from OTS, ETC or CNRS $0.80 62-26507

Trans. in French of Vysokomolekulyarnye Soedineniya 1959, v. 1, no. 6, p. 793-798.
Another trans. is available in English from OTS or SLA $1.60 as 63-10840, 2 Nov 62 [14]p.

DESCRIPTORS: *Cellulose acetates, *Thin films, Thermodynamics, Mechanical properties, Relaxation time

For abstract see Technical Translations: 9: 1252, 1963.

Lipatov, Yu. S.
[THE INTERACTION OF POLYMERS WITH FILLERS] VI. CERTAIN RHEOLOGICAL CHARACTERISTICS OF POLYMER SOLUTIONS IN THE PRESENCE OF FILLERS. [1963] [18]p. 11 refs.
Order from OTS or SLA $1.60 63-16597

Trans. of Vysokomolekulyarnye Soedineniya (USSR) 1962, v. 4, no. 10, p. 1528-1536.

DESCRIPTORS: *Polyvinyl alcohol, *Styrene plastics, *Polymers, *Fillers, Glass, Powders, Gelatins, Viscosity.

The effect of additions of finely dispersed glass powder on certain rheological characteristics was studied in aqueous solutions of gelatin and polyvinyl alcohol and for benzene solutions of polystyrene of relatively high concentrations. It was found that the addition of the filler increased the oriented viscosity considerably and led to the formation of thixotropic orientations the strength of which is less than that of the original oriented network of the solution. It was found that the addition of glass in an amount equal to 5-10 of the weight of the polymer in the solution had the greatest effect on viscosity, after which the increase in the effective viscosity became smaller. The addition of glass powder to polyesteracrylates MGF-9 and MGF-11 also increases the effective viscosity and leads to the formation of thixotropic structures. The observed effects are explained by the formation of additional crosslinks in the three-dimensional lattice of the solution, formed as a result of adsorptive interaction between the polymer molecules and filler particles. On the basis of studying the viscosities of solu-

tions of gelatin and polyvinyl alcohol in concentrations not exceeding 1% in the presence of a filler, it was established that in dilute solutions the addition of the filler also results in an increase in viscosity, which exceeds that calculated on the basis of Einstein's equation. (Author) (See also 63-12815)

Mori, Kohjiro.
EPOXY RESIN COMPOSITION MANUFACTURING METHOD. [1963] 3p. (chemical formulae omitted)
Order from OTS or SLA $1.10 63-16328

Trans. of Japanese patent publication SHO 37-15,237, pub. 26 Sep 62, (application SHO 35-34,541, 13 Aug 60) by Riken Gosei-jushi Co.

DESCRIPTORS: *Epoxy plastics, Amines, Sulfonic acids, Amides, Alkyl radicals, Catalyst, Heating. Preservation.

The invention concerns a resinous composition manufacturing method, wherein monoamino sulphonic acid amide or dialkyldiaminosulphonic acid amide is added to a liquid epoxy resin; they are made to react by heating to obtain a soluble and fusible resin; to this resin, a small amount of tertiary amine is added as a catalyst and, when necessary, a filler, colorant, etc. are further added and mixed thoroughly to produce thereby a resinous composition, which permits preservation for a long period, and yet highly heat resisting resinous moldings can be promptly obtained by heating therefrom. (Author)

Nakaguchi, Kohei, Ando, Tatsuo and Sano, Takezo.
METHOD OF MANUFACTURING CRYSTALLINE PROPYLENE POLYMER HAVING CONTROLLED DEGREE OF POLYMERIZATION. July 63, 9p.
Order from SA $19.00 SA Code-P-123

Trans. of published Japanese patent 4642/1962, cl. 26-B-11 (13-F-1) appl. no. 41149/1959 [filed] 28 Dec 59, pub. 15 June 62, by Sumitomo Kagaku Kogyo Co., Ltd.

DESCRIPTORS: *Polyethylene plastics, Manufacturing methods, *Propenes, Polymerization, Metalorganic compounds, *Ziegler catalysts, *Aluminum compounds, Ethyl radicals, Titanium compounds, Cadmium compounds, Zinc compounds, Halides

Plengle, Robert Smith.
A METHOD FOR THE ELONGATION OF ORGANIC POLYMER FILMS. July 63, 20p. (figs. omitted) 1 ref.
Order from SA $22.00 SA Code-P-147

Trans. of published Japanese patent 1589/1962, cl. 25-N-231.2, appl. no. 28542/1960 filed 22 June 60, pub. 9 May 62, by E. I. du Pont de Nemours & Co., U.S.A. (priority claimed: 23 June 59, U.S.A.).

DESCRIPTORS: *Plastic films, *Polyester plastics, Ethylenes, *Phthalates, Material forming

Schreyer, G.
PLASTICS IN OPTICS. Aug 63, 15p. 123 refs.
Order from ES $12.00

Trans. of Kunststoffe (West Germany) 1961, v. 51, no. 9, p. 569ff.

DESCRIPTORS: *Optics, *Plastics.

Semenido, G. E., Il'ina, D. E., and others.
THE POLYMERIZATION OF TRICHLOROACETALDEHYDE WITH AN ORGANOMETALLIC CATALYST. [1963] 7p. (figs. omitted) 6 refs.
Order from OTS or SLA $1.10 63-16975

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1962, v. 147 [no. 6] p. 1386-1388.

DESCRIPTORS: *Acetaldehydes, *Chlorides, Catalysts Metalorganic compounds, *Lithium compounds, Butyrates, Polymerization, *Acetyl plastics, *Halocarbon plastics.

Sklyarskii, A. M.
CENTRIFUGAL CASTING OF COG WHEELS AND LARGE BLANKS OF POLYAMIDE RESINS [Tsentrobezhnoe Lit'e Zubchatykh Koles i Krupnogabaritnykh Zagotovok iz Polyamidnykh Smol] tr. by I. Gawronska. 3 May 63, 11p. 10 refs. Courtaulds Ltd. Misc. Lit. 3479; [DSIR] NLL M. 3850.
Order from OTS or SLA $1.60 63-19899

Trans. of Plasticheskie Massy (USSR) 1961, no. 12, p. 22-26.
Another trans. is available from OTS or SLA $1.60 as 62-20020 [1962] [14]p. (foreign text included).

DESCRIPTORS: *Polyamide plastics, *Gears, Pulleys, Bushings, Flanges, *Centrifugal casting, Molding, Melting, Heat treatment, Deformation, Physical properties.

For abstract see Technical Translations 9: 1147, 1963

Sueoka, Yoichi.
METHOD OF SURFACE TREATING OF VINYL CHLORIDE BY POROUS NYLON. [1963] 6p.
Order from OTS or SLA $1.10 63-16317

Trans. of Japanese patent publication 16,848/1962, pub. 18 Oct 62, appl. 28 Sep 60 as 59497/1960, by Toyo Bosuifu Seizo Co., Ltd.

DESCRIPTORS: *Polyvinyl chloride, Surfaces, *Coatings Porous materials, *Nylon coatings, Adhesives, Synthetic rubber, Phenolic plastics.

The patent involves a method of surface treatment of vinyl chloride resin with porous nylon by painting the fundamental material of vinyl chloride with the first paste layer consisting of the solution of hardening acryl synthetic rubber, then painting, and forming the second paste layer consisting of the nylon solution con-

taining acryl synthetic rubber and phenol resin on the above described adhesive paste layer, and finally painting the nylon solution. (Author)

Suzumura, Hideo, Hirano, Katsuaki and Chiba, Teiichiro.
A METHOD TO PREVENT STICKING OF WATER-SOLUBLE FILM. July 63, 7p.
Order from SA $16.00 SA Code-P-125

Trans. of published Japanese patent 15469/1962, cl. 25-H-34 (25-H-09) appl. no. 185/1961 filed 6 Jan 61, pub. 28 Sep 62, by Kurashiki-Rayon Co., Ltd.

DESCRIPTORS: *Plastic films, *Polyvinyl alcohol, Adhesion, Inhibition, Additives, Dibasic acids, *Fumaric acids, *Sebacic acid

Takashima, Naoichi, Tanaka, Sanae and others.
A PURIFIED AND STABILIZED POLYOLEFIN COMPOSITE. July 63, 7p.
Order from SA $16.00 SA Code-P-122

Trans. of published Japanese patent 10567/1962, cl. 25-H-311 (25-H-05) (25-A-13) appl. no. 22118/1960 filed 26 Apr 60, pub. 8 Aug 62, by Mitsubishi Yuka Co., Ltd.

DESCRIPTORS: *Polyethylene plastics, *Composite materials, Production, Stabilization, Purification, Odors, Additives, Metallic compounds, *Sodium compounds, *Borohydrides, *Lithium compounds, *Aluminum compounds, Hydrides, Chlorides.

Takayanagi, Motoo.
A METHOD FOR PRODUCING ELONGATED MATERIAL FROM CRYSTALLIZED HIGH MOLECULAR COMPOUND. July 63, 11p. 1 ref.
Order from SA $19.00 SA Code-P-132

Trans. of published Japanese patent 15484/1962, cl. 25-N-231.2, appl. no. 38184/1960 filed 12 Sep 60, pub. 28 Sep 62.

DESCRIPTORS: *Plastic films, *Fibers (Synthetic), Production, *Polyethylene plastics, Ethylenes, Propenes, Heat treatment, Material forming

Takeishi, Minoru and Ando, Tatsuo.
A PROCESS FOR THE PRODUCTION OF PARAFORMALDEHYDE. July 63, 7p.
Order from SA $16.00 SA Code-P-124

Trans. of published Japanese patent 967/1955, cl. 16-B-511.1, appl. no. 7752/1953 filed 30 Apr 63, pub. 17 Feb 55, by Sumitomo-Kagaku-Kogyo Co.

DESCRIPTORS: *Acetyl plastics, *Formaldehyde, Solids, Production, Chemical precipitation

Tanaka, Hideo, Tomioka, Mamoru and others.
A METHOD FOR THE PRODUCTION OF CRYSTALLINE VINYL CHLORIDE POLYMER. July 63, 9p.
Order from SA $19.00 SA Code-P-127

Trans. of published Japanese patent 15937/1962, cl. 26-B-141, appl. no. 38498/1960 filed 20 Sep 60, pub. 6 Oct 62, by Daiwa-Boseki Co., Ltd.

DESCRIPTORS: *Heat-resistant plastics, *Polyvinyl chloride, Production, *Vinyl chlorides, Polymerization, Copolymerization, Additives, *Chlorocarbons

Uskov, I. A., Tarasenko, Yu. G., and Kusnitsyna, T. A.
FILLED POLYMERS. IV. COMPOUNDING OF DISSOLVED POLYMETHYLMETHACRYLATE WITH FILLERS. [1963] [8]p. 9 refs.
Order from OTS or SLA $1.10 63-16595

Trans. of Vysokomolekulyarnye Soedineniya (USSR) 1961, v. 3, no. 1, p. 37-40.
Other translations are available from ATS $6.25 as ATS-94P59R [1962] 4p.; from ICE in v. 1, no. 1, $15.00/year; an abstract trans. from OTS or SLA $1.10 as 61-19866, AID-61-44, 10 Apr 61, 2p.

DESCRIPTORS: *Acrylic resins, Polymers, *Fillers, Methyl radicals, Bentonite.

Using modified bentonites and polymethylmethacrylate as an example, a method was worked out for adding a filler to a polymer in the dissolved state, with subsequent separation of the filled polymer by coprecipitation with a suitable precipitant. Using differential thermographic analysis, it was shown that the method proposed for the addition of the filler results in dense screening of its surface by macromolecules of the polymer provided that the components are compatible. The strength of the resulting polymers in the glass state is higher, and their flow temperature is considerably higher than that of the pure polymer. This is due to the strengthening effect of the fillers which are active with respect to the given polymer. (Author) (See also 63-16596)

Walko, E. I. and Tesoro, O. C.
ADDITION PRODUCTS OF ALIFATIC POLYAMINES TO POLYALKOXY COMPOUNDS. [1963] 16p.
Order from OTS or SLA $1.60 63-16334

Trans. of Belgian patent 554,506 (International Convention: U. S. appl. 561,365, 25 Jan 56) by Onyx Oil & Chem.

DESCRIPTORS: *Polyamide plastics, *Ethyleneamines, Esters, Alkoxy radicals, *Amines, *Textiles, Addition reactions, Electrical conductance.

Yamada, Noboru and Arakawa, Tamio.
METHOD OF MANUFACTURING POLYOLEFINE MOLDINGS HAVING A GOOD DYEING AFFINITY. July 63, 6p.
Order from SA $16.00 SA Code-P-139

Trans. of published Japanese patent 13877/1962, cl. 25-N-231 (26-B-11) (136-G-22) (48-B-0) appl. no. 30888/1960 filed 12 July 60, pub. 13 Sep 62, by Teikoku Jinzo Kenshi Co., Ltd.

DESCRIPTORS: *Plastic films, *Fibers (Synthetic), *Polyethylene plastics, Manufacturing methods, *Radiation chemistry, *Ethylenes, *Propenes, Radiation effects, Sulfur compounds, Dioxides.

Yamaji, Shigetoshi.
NYLON-EPOXY COATING MATERIALS. [1963] 2p.
Order from OTS or SLA $1.10 63-16327

Trans. of Japanese patent publication SHO 37-14,822, pub. 22 Sep 62 (application SHO 34-18,835, 15 June 59) by Tokyo Three-Bond Co.

DESCRIPTORS: *Nylon coatings, *Epoxy plastics, Aging (Materials), Amides, Amines.

The invention involves a nylon-epoxy coating material obtained by adding, as a curing agent, polyamide and/or polyamine to a mixture prepared by mixing 1 part of the fine powder of 66-Nylon resin into from 1/2 to 3 parts of epoxy resin. (Author)

Behre, Johannes and Cöhde, Karl.
A NEW INVESTIGATION METHOD FOR EVALUATING FILLERS FOR THE RUBBER INDUSTRY. [1963]. 10p. (tables figs. omitted) 2 refs.
Order from SLA $1.10 63-16247

Trans. of Kautschuk (Germany) 1939, v. 15, p. 160-166.

DESCRIPTORS: *Fillers, Rubber, Particle size, Surface-active substances, Adsorption, Analysis.

For measuring the activity of fillers toward rubber there is proposed a method based on measuring the sangajol adsorption of the filler. Thirteen known rubber fillers were investigated in this way, and exhibited a behavior which is in agreement with the characteristics in rubber. (Author)

Gladding, Edward K. and Nice, Jack R.
METHOD OF PRODUCING HYDROCARBON COPOLYMER. July 63, 12p.
Order from SA $19.00 SA Code-P-164

Trans. of published Japanese patent 15041/1962, cl. 26-B-11 (26-B-21) (25-H-211) appl. no. 43484/1961 filed 5 Dec 61, pub. 25 Sep 62, by E. I. du Pont de Nemours and Co., U.S.A. (priority claimed: 6 Dec 60, U.S.A.).

DESCRIPTORS: Elastomers, Polyethylene plastics, Production, Hydrocarbons, Alkenes, *Ethylenes, *Propenes, *Dienes, Copolymerization, Solvents, *Vinyl chlorides, Metalorganic compounds, *Vanadium compounds, Chlorides, *Aluminum compounds, Alkyl radicals, Halides, *Vulcanization

Arai, S.
ÉTUDE SUR LA CUISSON DU BAMBOU-TOUFFE (SINO-TAKE) PAR LA MÉTHODE DU SULFITE NEUTRE DE SODIUM (The Cooking of Bamboo (Sinotake, Nipponocalamus) by the Neutral Sodium Sulfite Method). 12p. 12 refs.
Order from OTS, ETC or CNRS $0.80 62-26995

Trans. in French of [Kemi-pa Gikyo-Shi] (Japan) 1956, v. 10, no. 11, p. 37-40.

DESCRIPTORS: *Bamboo, *Sulfate pulp, Cellulose, Lignin.

Chomin, Z.
A CONTRIBUTION TO THE DETERMINATION OF THE DELIGNIFICATION DEGREE OF HIGH YIELD SULPHATE PULPS BY MEANS OF THE KAPPA NUMBER. [1962] 5p. (figs. omitted) 6 refs.
Order from SLA $1.10 63-10529

Trans. of Przeglad Papierniczy (Poland) 1961, v. 17, no. 1, p. 3-6.

DESCRIPTORS: *Sulfate pulp, Wood pulp, Lignin, Processing, Refineries, Paper industry.

Kotte.
TEMPERATURE FLUCTUATIONS IN THE PAPER STORE. [1963] 3p.
Order from SLA $1.10 63-18348

Trans. of Allgemeine Papier-Rundschau (West Germany) 1958, no. 4, p. 152-153.

DESCRIPTORS: *Paper, Storage, Temperature, Air, Humidity, Heating.

Mita, M., and Saéke, T.
ÉTUDE SUR LE PAPIER DE FIBRES SYNTHÉTIQUES. Rapport I. FABRICATION DU PAPIER D'ALCOOL DE POLYVINYLE (I) (Synthetic Fiber Papers. I. The Manufacture of Poly-(vinyl Alcohol) Papers. I.). 8p.
Order from OTS, ETC or CNRS $0.80 62-26991

Trans. in French of [Kemi-pa Gikyo-Shi] (Japan) 1958, [v. 12] no. 11, p. 41-43.

DESCRIPTORS: *Paper, *Fibers (Synthetic), *Vinyl alcohol, Polymers, Bonding.

Overbeck, Wilhelm and Müller, Friedrich.
THE PRE-HYDROLYSIS OF VARIOUS WOODS WITH WATER UNDER PRESSURE AND THE INDUCED ALTERATIONS IN THE WOOD CONSTITUENTS, PARTICULARLY IN THE LIGNIN. [1963] 13p. 6 refs.
Order from SLA $1.60 63-14223

Trans. of [Chemische] Berichte (Germany) 1942, v. 75, no. 5, p. 547-554.

DESCRIPTORS: *Wood, Degradation, Pressure, Water, *Hemicellulose, *Cellulose, Hydrolysis, Acetic acids, Formic acids, *Lignin, Carbohydrates, Monosaccharides, Polysaccharides, Solubility.

Schorning, Paul.
INVESTIGATIONS ON HYDROLYSIS AND PRE-HYDROLYSIS OF WOODS PARTICULARLY IN AN ORGANIC AQUEOUS MEDIUM. [1963] 16p. 20 refs.
Order from SLA $1.60 63-14717

Trans. of Faserforschung und Textiltechnik (East Germany) 1961, v. 12, no. 2, p. 49-55.

DESCRIPTORS: *Wood, *Cellulose, Degradation, Hydrolysis, Hydrochloric acid, Alcohols, *Catalysts, Sodium compounds, Chlorides, Formaldehyde, Complex compounds, Propanes, Phenyl radicals, *Lignin, *Carbohydrates, Solubility, Sulfate pulps.

The following experiments are described and interpreted: (1) Comparison of prehydrolysis in pure aqueous HCl and in presence of alcohol. A correlation was found between carbon chain length of the respective alcohol and the extent of solubility of lignin and wood polyoses. (2) Comparison of prehydrolysis in presence or absence of NaCl or CH_2O (formaldehyde). Additives in prehydrolysis may act as "activators" or "inhibitors". Addition of NaCl permits a reduction in prehydrolysis time from 5 to 3 hours. On the other hand, the inhibiting effect of formaldehyde could be proven in presence of an otherwise cellulose degrading agent (NaCl). Addition of formaldehyde alone to a hydrolysis liquid lowers other unavoidable losses in cellulose in prehydrolyzed Kraft cooking. (3) An analysis of components of hydrolysates (or percolates) indicated the presence of phenyl-propane complexes which were formed during alcoholysis. This indicates new aspects for lignin and carbohydrate utilization in including alcoholysis in prehydrolysis treatments. (Author)

Schröder, S. and others.
ANALYSIS OF DISTURBANCE MEASUREMENTS ON PAPER MACHINES. Feb 63, 7p. (figs. omitted).
Order from SLA $1.10 63-14471

Trans. of Svensk Pappers-tidn[ing] 1962, v. 65, no. 20, p. 785-789.

DESCRIPTORS: *Machines, *Paper, *Fatigue (Mechanics), Stresses.

A technique is described for recording and analysing periodic as well as transient speed disturbances on paper machines. Details are given of a number of tests which illustrate this technique, which involves determination of the values for the transfer function and calculation of the draw/frequency curve for an applied disturbance. (Author)

Skalicky, C. and Vondrakova, M.
EVALUATION OF THE PARCHMENTISING PROPERTIES OF PULPS. [1963] 8p. (figs. tables omitted) 5 refs.
Order from SLA $1.10 63-18349

Trans. of Papir a Celulosa (Czechoslovakia) 1955, v. 10, no. 12, p. 260-264.

DESCRIPTORS: Paper, *Wood pulp, Sheets, Manufacturing methods.

MATHEMATICS

ABSTRACTS PERTAINING TO COMMUNIST CHINA IN SOVIET ABSTRACTS JOURNALS NO. 81 (MATHEMATICS SERIES). 29 July 63, 7p. JPRS: 20372.
Order from OTS $0.50 63-31391

Trans. of selected abstracts from Referativnyi Zhurnal. Matematika (USSR) 1962, no. 9.

DESCRIPTORS: *Abstracts, *Mathematics, *China, Differential equations, Integral equations, Numerical methods and procedures.

Aizerman, M. A.
ON A PROBLEM CONCERNING THE STABILITY "IN THE LARGE" OF DYNAMIC SYSTEMS [Ob Odnoi Probleme Kasayutseisya Ustoichnosti "v Bol'shom" Dinamicheskikh Sistem]. [1962] [5]p. 2 refs.
Order from OTS or SLA $1.10 62-10150

Trans. of Uspekhi Matematicheskikh Nauk (USSR) 1949, v. 4 [no. 4(32)] p. 187-188.
Another trans. is available from OTS $1.10 as AD-264 173, STL-TR-61-5110-32, May 61, 6p.

DESCRIPTORS: *Nonlinear systems, Control systems, Automatic, *Stability, Deflections, Functions, Equations, *Differential equations, Linear systems.

A problem is proposed about the stability of a set of differential equations which has significance to the theory of automatic control systems. An assertion is made, based on a linear analogy to a nonlinear system. (Author)

Alenitsyn, Yu. E.
VARIATION REGIONS OF THE COEFFICIENT SYSTEMS OF FUNCTIONS, REPRESENTABLE BY A SUM OF INTEGRALS OF STILTJES. [1962] 5p. 2 refs.
Order from OTS or SLA $1.10 62-16567

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1961, v. 139 [no. 2] p. 263-266.

DESCRIPTORS: *Functions, *Integrals, Series, Convex sets, Calculus of variations.

The work investigates variation regions of arbitrary finite systems of coefficients for decompositions in Laurent series of functions, representable in finally connected circular region by a sum of Stiltjes integrals and, in particular, of functions, typically substantial in circle and in circular ring. The variation region is found for the system $\{f(z_0), c_2\}$, where z_0 - a fixed point of a single circle E, while $f(z) = z + c_2z^2 + \ldots$ passes a series of functions, typically substantial in E.

Boltyanskii, V. G.
APPLICATION OF THEORY OF OPTIMAL PROCESSES TO FUNCTION APPROXIMATION PROBLEMS. 25 Mar 63 [21]p. 9 refs. FTD-TT-63-152.
Order from OTS or SLA $2.60 63-19475

Unedited rough draft trans. of Akademiya Nauk SSSR. Matematicheskii Institut. Trudy, 1961, v. 60, p. 82-95.

DESCRIPTORS: *Control, Theory, Functions, Polynomials, *Numerical analysis, Real variables, *Convex sets, *Functional analysis.

Lur'e, A. L.
ALGORITHM FOR SOLVING A TRANSPORT PROBLEM BY APPROXIMATING WITH CONDITIONALLY OPTIMUM PLANS. 20 Feb 63 [14]p. 9 refs. FTD-TT-62-1498. AD-400 538.
Order from OTS or SLA $1.60 63-19412

Unedited rough draft trans. of Vychislitel'naya Matematika (USSR) 1961, no. 7, p. 151-160.

DESCRIPTORS: *Algorithms, *Linear programming.

Malinskii, K. K.
ON THE DERIVATION OF NECESSARY CONDITIONS IN THE VARIATIONAL MOVING BOUNDARY PROBLEM FOR DOUBLE INTEGRALS. [1963] 9p. 5 refs.
Free copies available from Boeing Scientific Research Labs. Library as Boeing Trans. R70. When supply is exhausted, order from OTS or SLA $1.10, 63-16992.

Trans. of Leningrad U. Uchenye Zapiski (USSR) 1950, no. 137, p. 198-203.

DESCRIPTORS: *Calculus of variations, *Integrals, Integration.

Valenken, N. A.
ON A CLASS OF COMPLETE ORTHONORMAL SYSTEMS (Ob Odnom Klasse Polnikh Ortonormalnikh Sestem). [1961] [40]p.
Order from SLA $3.60 61-20660

Trans. of Bulletin of the Academy of Sciences and Arts [sic] 1947, v. 11, p. 363-398.

DESCRIPTORS: *Groups (Mathematics), Algebraic topology, *Fourier analysis, *Series, Special functions.

Computing Devices

Afinogenov, L. P. and Kolosov, V. G.
BINARY PARALLEL SUMMATOR WITH THROUGH TRANSFER. 25 Mar 63 [5]p. FTD-TT-63-175.
Order from OTS or SLA $1.10 63-19344

Unedited rough draft trans. of Russian patent 142, 818 (642726/26, 6 Jan 60).

DESCRIPTORS: Digital computers, *Computer systems components, *Memory devices, Magnetic cores, Arithmetic operations.

The invention concerns a binary parallel summator with through transfer, utilizing the impedance principle of ferrite work, composed of paraphase ferrite register registers of the first and second addends, connected by census bus-bars for realization of the logical function of addition according to the "two" modulus with ferrites of the summator, census bus-bars the states of which for obtaining sums in a given place, the transfer and its inversion in the following place pass through the ferrites of the sum register and are connected with the inversed and direct output of the transfer of the preceeding place, are distinguished by the fact that for the purpose of enlarging the reliability, through the ferrites of the registers and the summator pass compensation bus-bars. (Author)

Ivakhnenko, A. G.
COMPARISON OF CYBERNETIC EXTREMAL PULSE SYSTEMS WHICH DIFFER IN EXTREMUM SEARCH STRATEGY. [1962] [27]p. 10 refs. [DSIR] NLL M.8986.
Order from OTS or SLA $2.60 63-15233

Trans. of Avtomatyka (USSR) 1961, no. 3, p. 3-29. Another trans. is available from OTS or SLA $4.60 as 61-28903, JPRS-10530, 17 Oct 61 [43]p.

DESCRIPTORS: *Cybernetics, Complex variables, *Noise, Data processing systems, Operation, *Computers, *Control systems.

The possibilities of four types of sampled-data extremum systems (each with four variations of the law of change of the manipulated variable) were compared. The speed of the systems was estimated by the value of the minimum sampling interval T, the optimum steps being equal for all the systems. The conventional step system and the continuous test signal system had the highest speed. In the presence of noises the optimum speed decreased for all systems. The influence of the noise was inversely proportional to the number of integrations of the signal in the given system. A continuous test signal system with double integration of the signal and harmonic test signal had the highest potential noise resistance. Special complication of the test signal form increased the noise resistance. It was concluded that control by preceding differences should not be used in the continuous test signal or derivative sensing systems. This conclusion was invalid for the conventional step system.

MECHANICS

Baida, E. N.
ON THE PLEONASMS IN THE GENERAL SOLUTION OF EQUILIBRIUM EQUATIONS OF AN ANISOTROPIC BODY IN DISPLACEMENT, tr. by Ingeborg V. Baker. 13 Apr 63 [20]p. 2 refs. RSIC-10. AD-404 918.
Order from OTS or SLA $1.60 63-19564

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Stro[itel'st]vo i Arkhitekt[ura] (USSR) 1959 [v. 2] no. 1, p. 27-37.

DESCRIPTORS: *Anisotropy, Solids, Stability, Differential equations, *Numerical analysis, Mechanics.

Grigol'yuk, E. I.
CONCERNING THE STRENGTH AND STABILITY OF CYLINDRICAL BIMETALLIC SHELLS, tr. by Ingeborg V. Baker. 19 Apr 63 [52]p. 10 refs. RSIC-12.
Order from OTS or SLA $5.60 63-19596

Trans. of [Akademiya Nauk SSSR. Institut Mekhaniki]. Inzhenern[yi] Sbornik (USSR) 1953, v. 16, p. 119-148.

DESCRIPTORS: *Structural shells, *Elastic shells, *Cylindrical bodies, Tensile properties, Stability, Stresses, Boundary layer, Thickness, Heating, Statics, Dynamics, Integrals, Equations.

The strength and stability of an axially symmetric, cylindrical, bimetallic shell is investigated. The shell is assumed to be thin and elastic. It is considered that the hypothesis of incompressibility of the layers and of the non-deformability of the normal element retain this force also for the bimetallic shell. Separately investigated was a shell of an infinite and finite length, and the so-called condition of reduction when applicable to the shell. Examples of calculation of shells down to the determinants of displacements and stresses, are given. In a particular case, the results for a homogeneous shell are obtained. Axisymmetric stability of the shell is investigated by linear arrangement. (Author)

Guz', O. M.
AXIALLY SYMMETRICAL DEFORMATION OF HOLLOW ORTHOTROPIC SHELLS OF ROTATION. 12 June 63 [5]p. 1 ref. FTD-TT-63-597.
Order from OTS or SLA $1.10 63-23423

Unedited rough draft trans. of A[kademiya] N[auk] URSR [Kiev]. Dopovidi, 1962, no. 8, p. 1044-1047.

DESCRIPTORS: *Structural shells, *Load distribution, *Deformation, Rotation, Numerical analysis, Bodies of rotation.

Hiedemann, E. A. and Spence, R. D.
ON A UNIFIED THEORY OF RELAXATION PHENOMENA. [1963] 18p. (figs. refs. omitted).
Order from SLA $1.60 63-14649

Trans. of Zeit[schrift] f[ür] Physik (West Germany) 1952, v. 133, p. 109-[117].

DESCRIPTORS: Materials, *Elasticity, *Stresses, Deformation, *Relaxation time, Theory, Linear systems, Analog systems, Harmonic analysis, *Statistical functions.

The concept of relaxation signifies in its present day form a property of the response of linear systems. The assumption of causal succession of events in which the response must, as the effect, follow the cause, namely, the excitation of the system---is sufficient for the derivation of a unified theory of relaxation phenomena. The derivation presented in this paper is based on function theory. It is, for the sake of clarity of exposition but without loss in generality, carried through by means of an example, the phenomena of elastic relaxation. The conditions necessary for the occurrence of discrete or continuous spectra are obtained, and assertions are made about the nature of the special distribution. (Author)

Ivlev, D. D.
THEORY OF ELASTICITY: THE EQUATIONS OF LINEARIZED SPACE PROBLEMS IN THE THEORY OI IDEAL PLASTICITY. [1963] 4p. 4 refs.
Order from OTS or SLA $1.10 63-14509

Trans. of Akademiya Nuak SSSR. Doklady, 1960, v. 130, no. 6, p. 1232-1235.

DESCRIPTORS: *Elasticity, *Creep, Beams (Structural), *Differential geometry, Equations.

Kazantsev, A. P.
THE STRUCTURE OF A SHOCK WAVE IN A RAREFIED NON-ISOTHERMAL PLASMA. July 63, 4p. 9 refs.
Order from ICE in v. 3, no. 3, $15.00/year

Trans. of Zhurnal Prikladnoi Mekhaniki i Tekhnicheskoi Fiziki (USSR) 1963, no. 1, p. 32-37.

DESCRIPTORS: Chemical engineering, *Plasma physics *Shock waves, Superaerodynamics, Hydrodynamics.

Krasnoshchekov, P. S.
OSCILLATIONS OF A PHYSICAL PENDULUM HAVING CAVITIES FILLED WITH A VISCOUS FLUID. 10 June 63 [17]p. 1 ref. FTD-TT-63-511.
Order from OTS or SLA $1.60 63-23196

Unedited rough draft trans. of #Prikladnaya Matematika i Mekhanika (USSR) [1963] v. 27, no. 2, p. 193-202.

DESCRIPTORS: *Oscillation, Viscosity, Fluids, Solids, *Reynolds number, *Fluid dynamic properties, Numerical analysis, Partial differential equations.

An asymptotic method for investigating the nonstationary motions of viscous incompressible fluids with large Reynolds numbers (N_{Re}), which arise during the oscillation of various solids which either contain a fluid or are emersed in one, and during the oscillation of liquid volumes having a free surface, is applied to the investigation of small oscillations of a physical pendulum having cavities completely filled with an incompressible viscous fluid.

Lipka, Jerzy.
THE EFFECT OF ROTARY INERTIA AND SHEAR FORCES ON THE FREE VIBRATIONS OF ROTATING BARS. [1963] 15p. 1 ref.
Free copies available from Boeing Scientific Research Labs. Library as Boeing Trans. R59. When supply is exhausted, order from SLA $1.60 63-16630

Trans. of Archiwum Budowy Maszyn (Poland) 1960, v. 7, no. 3, p. 283-294.

DESCRIPTORS: Rotation, *Inertia, *Shear stresses, *Vibration, Rods, Functions, Equations, Numerical analysis, Mechanical engineering.

The problem is considered of the effect of transverse rotary inertia and shear forces on the frequency of the free bending vibrations of rotating rods of any variable cross section. An energy method is used, by introducing into the equations expressions for the energy arising from the effect of the moments of force of the rotary inertia of the cross sections of the rod and the energy from the shear effect of the transverse forces. The accuracy of the approximate calculations is increased by satisfying generalized conditions of orthogonality of the functions and all boundary conditions of the problem. In conclusion the results of calculations for a propeller blade are given. The effect of rotary inertia and shear forces is most marked in relation to the frequency of free vibrations of higher orders, with the calculated ω_n being lower than those obtained without taking into account both factors. (Author)

Müller, L[adislav] and Mach, O[tto].
MESURE DU MODULE D'ELASTICITÉ D'YOUNG EN FONCTION DE LA TEMPÉRATURE (Measurement of the Young Modulus of Elasticity as a Function of the Temperature) 15p. FX-52.
Order from OTS, ETC or CNRS $0.80 62-26526

Trans. in French of Silikaty (Czechoslovakia) 1959 [v. 3, no. 2] p. 168-[176].
Another trans. is available in English from SLA mi$2.40, ph$3.30 as 60-14119 [1959] [14]p.

DESCRIPTORS: *Elasticity, Measurement, Vibration, *Resonance.

Nowacki, W.
THERMOELASTICITY. International Series of Monographs on Aeronautics and Astronautics, Div. I: Solid and Structural Mechanics, v. 3. [1963] 628p. 602 refs.
Order from Addison-Wesley Publishing Co., Inc., Reading, Mass.

Trans. of unidentified mono., Warsaw, 1962.

DESCRIPTORS: *Aerothermoelasticity, *Elasticity, *Thermal conductivity, Stresses, Differential equations, Equations of motions, *Structural shells, *Elastic shells, Heating, Disks, *Metal plates, *Thermal stresses.

Polyanskii, V. A. and Tagirov, R. K.
EFFECT OF JOULE HEATING ON HEAT TRANSMISSION AT THE CRITICAL POINT [AND] DETERMINING THE BASE PRESSURE AND BASE TEMPERATURE ON THE SUDDEN EXPANSION OF A SONIC OR SUPERSONIC FLOW. 5 Apr 63 [24]p. 11 refs. FTD-TT-63-91. AD-402 596.
Order from OTS or SLA $2.60 63-19315

Unedited rough draft trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Mekhanika i Mashinostroenie, 1961, no. 5, p. 11-15, 30-37.

DESCRIPTORS: *Heat transfer, *Magnetohydrodynamics, *Supersonic flow, Pressure, Temperature, Determination, Aerodynamic heating, Gas flow.

Raevskii, N[ikolai] P[etrovich] and Subbotin, M[ikhail] I[vanovich].
MEASUREMENT OF LINEAR ACCELERATIONS. 7 Mar 63 [77]p. 55 refs. FTD-TT-62-860.
Order from OTS or SLA $7.60 63-19440

Unedited rough draft trans. of mono. Izmerenie Lineinykh Uskorenii, Moscow, 1961, 62p.

DESCRIPTORS: *Accelerometers, Theory, Design, Inertia, Acceleration, Linear accelerators.

Contents:
Measurement of maximum values of the acceleration
Apparatus for measuring maximum accelerations
Fundamentals of the theory of accelerometers with inertial elements
Design of accelerometers
Experimental determination of accelerometer constants
Sensors for linear accelerations with inertial elements
Measurement of impact accelerations
Sensors for measurement of impact acceleration
Calibration of impact accelerometers.

Stojek, Zbyszko.
ON THE USE OF THE HAMILTON PRINCIPLE FOR DERIVING THE EQUATIONS OF BENDING VIBRATIONS OF A BEAM TAKING INTO ACCOUNT SHEAR. [1963] 11p. 5 refs.
Free copies available from Boeing Scientific Research Labs. Library as Trans. R58. When supply is exhausted, order from SLA $1.60, 63-16631

Trans. of Rozprawy Inzynierskie (Poland) 1960, v. 8, no. 2, p. 203-210.

DESCRIPTORS: *Beams (Structure), *Vibration, *Differential equations, Shear stresses, Elasticity, Numerical analysis.

Aerodynamics and Pneumatics

Borisov, B. I.
DETERMINATION OF THE PROFILE OF LEAST RESISTANCE OF AN ANNULAR WING. 11 June 63 [7]p. FTD-TT-63-397.
Order from OTS or SLA $1.10 63-23424

Unedited rough draft trans. of Moscow U. Vestnik. [Seriya 1: Matematika, Mekhanika] (USSR) 1961 [v. 16] no. 1, p. 62-65.

DESCRIPTORS: *Ring wings, *Supersonic flow, Friction, Velocity, Aerodynamic characteristics, Numerical analysis.

Deich, M. E., Gubarev, A. V. and others.
INVESTIGATION OF NEW M. E. I. NOZZLE CASCADES FOR SUPERSONIC VELOCITIES. 4 Mar 63 [15]p. 4 refs. FTD-TT-63-99. AD-400 549
Order from OTS or SLA $1.60 63-19158

Unedited rough draft trans. of Teploenergetika (USSR) 1962 [v. 9] no. 10, p. 47-52.

DESCRIPTORS: *Supersonic flow, *Supersonic nozzles, Airfoils, Transonic characteristics, Tests.

Recommendations are made for the design of nozzle cascades which are distinguished by high efficiency over a wide range of supersonic velocities. Results of investigations of new cascades are given for Mach numbers from 0.6 to 1.8. (Author)

Landa, P. S. and Strelkov, S. P.
WING FLUTTER AT NONLINEAR AERODYNAMIC FORCES. 27 May 63 [13]p. 3 refs. FTD-TT-63-201.
Order from OTS or SLA $1.60 63-23445

Unedited rough draft trans. of A[kademiya] N[auk] SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Mekhanika i Mashinostroenie, 1962, no. 5, p. 111-117.

DESCRIPTORS: *Wings, *Flutter, *Aerodynamic loading, Vibration, Aerodynamic characteristics, Numerical analysis.

Loitsyanskii, L. G. and Lapin, Yu. V.
EMPLOYING THE KARMAN METHOD FOR CALCULATING A TURBULENT BOUNDARY LAYER ON A PLATE IN A GAS FLOW. 13 Feb 63 [14]p. 8 refs. FTD-TT-62-1768. AD-400 500.
Order from OTS or SLA $1.60 63-19200

Unedited rough draft trans. of Politekhnicheskii Institut [Leningrad. Trudy] (USSR) 1961, no. 217, p. 7-16.

DESCRIPTORS: *Turbulent boundary layer, *Gas flow, Sheets, Friction, Compressible flow, *Numerical methods and procedures.

It is shown that when applying the Karman method and assuming friction stress constancy across the boundary layer, there is a simpler way of formulating a solution, requiring no introduction of the concept concerning the Reynolds number of the boundary layer and compilation of the "law of resistivity". This method considerably simplifies the investigation of problems pertaining to a turbulent boundary layer in a gas flow. The use of a simple asymptotic break down allows comparatively easily to generalize the Karman theory of plate resistance in an incompressible liquid for the case of a gas flow with greater M-numbers. (Author)

Hydrodynamics, Hydraulics, and Hydrostatics

Azbel, D. S.
THE HYDRODYNAMICS OF BUBBLER PROCESSES. July 63, 5p. 20 refs.
Order from ICE in v. 3, no. 3, $15.00/year

Trans. of Khimicheskaya Promyshlennost' (USSR) 1962, no. 11 [p. 854-857].

DESCRIPTORS: Chemical engineering, *Hydrodynamics, *Bubbles, Mass transfer, Porous materials.

Gusev, N. F. and Chertkov, Z. I.
STATIC STABILITY CONDITION OF A HYDRAULIC ELECTROMAGNETIC AMPLIFIER [Uslovie Staticheskoi Ustoichivosti Gidravlicheskogo Elektromagnitnogo Usilitelya]. [1961] 6p. 1 ref. MDF G-134.
Order from OTS or SLA $1.10 62-15855

Trans. of Avto[matika] i Tele[mekhanika] (USSR) 1955, v. 16, no. 5, p. 497-500.

DESCRIPTORS: *Amplifiers, Electromagnetic fields, *Hydraulic systems, Statics, Stability, Magnetic amplifiers, Drives, Pressure regulators.

The question is considered of the static stability condition of a hydraulic electromagnetic amplifier used for the high-speed following drive of trottle regulation. Expressions are obtained for the hydraulic and electromagnetic moments acting during amplifier operation and the stable amplifier operating condition is determined. (Author)

Lauck, August.
THE OVERFLOW OVER A WEIR (Der Überfall über ein Wehr). Doctoral thesis, Berlin U. [1962] [52]p. (foreign text included) 16 refs.
Order from SLA $5.60 62-16433

Trans. of Zeitschrift für Angewandte Mathematik und Mechanik (Germany) 1925, v. 5, no. 1, p. 1-16.

DESCRIPTORS: *Dams, *Hydrodynamics, Mathematical analysis.

Yutkin, L. A. and Gol'tseva, L. I.
HYDRAULIC VOLUMETRIC PUMP. 13 Mar 63 [5]p. FTD-TT-62-1847; AD-402 429.
Order from OTS or SLA $1.10 63-19468

Unedited rough draft trans. of Russian patent 110,887, 1955, appl. no. 550,495, 17 Mar 55.

DESCRIPTORS: *Hydraulic pressure pumps, Electrodes, Sparks, Electric discharges, Compressible flow, Design.

The invention concerns a volumetric pump with a pressure chamber provided with two electrodes, used for creation of spark discharges, causing pressure pulses in the compressed liquid. In a known pump of analogous mode of operation not enough provisions were made to

prevent the ejection of liquid from the pressure chamber into the feeding channel. To eliminate the mentioned deficiency in the proposed pump the feeder is made of several channels, connected with each other in sequence under an angle of 90°. (Author)

METALLURGY

METALLURGY AND METALLOGRAPHY OF PURE METALS, 1961, VOL. 3: SELECTED ARTICLES. 23 Apr 63 [70]p. 36 refs. FTD-TT-62-1288.
Order from OTS or SLA $6.60 63-19429

Unedited rough draft trans. of Metallurgiya i Metallovedenie Chistykh Metallov (USSR) 1961, v. 3, p. 64-73, 152-162, 175-182, 190-192, 233-248, 284-289.

DESCRIPTORS: *Metallurgy, *Metallography, *Metals, *Hafnium compounds, Iodides, Oxidation, Reaction kinetics, *Niobium, *Zone melting, Electric furnaces, *Beryllium, Elasticity, *Lithium, Distribution, *Iron, *Steel, Tracer studies, *Carbon alloys, *Zirconium alloys, Niobium alloys, Solubility.

Contents:
Investigation of the oxidation kinetics of iodide hafnium in the temperature range from 600 to 1000°C, by A. I. Evstyukhin and others
Zone melting of niobium by the arc method, by A. I. Evstyukhin and others
Investigation of the oxidation kinetics of niobium in the temperature region from 500 to 1000°C, by B. N. Revyakin and others
Modulus of elasticity of beryllium at elevated temperatures, by A. N. Semenikhin and others
Diffusion mobility of lithium in iron and steels, by N. M. Beskorovainii and others
The solubility of metals in carbon, by Yu. G. Godin and others.

Adlassnig, K. and Foglar, O.
THE STUDY OF POWDER METALLURGICAL PRODUCTS OF Cu, Mo and W WITH THE AID OF ULTRASONIC AND CONDUCTIVITY MEASUREMENTS (Die Untersuchung von Pulvermetallurgischen Produkten aus Cu, Mo und W mit Hilfe von Ultraschall- und Leitfähigkeitsmessungen). [1963] 18p. (foreign text included) 7 refs.
Order from SLA $1.60 63-16735

Trans. of Radex-Rundschau (Austria) 1950, no. 2, p. 79-84.

DESCRIPTORS: *Powder alloys, *Copper, *Molybdenum, *Tungsten, Structural properties, Electrical conductance, Density, Ultrasonic radiation, *Crystal structure, Crystal lattice defects, Metallography.

Compacts made of Cu, Mo and W and moulded with the minimum of pressure were sintered at various times and at various temperatures. The resulting sintered materials show a distinct increase in the property values only if they are moulded at sintering temperatures above $\vartheta = 0,5$. This increase is approximately linear and can be expressed by a function of the form of Arrhenius' equation. The values of the single properties differ in various degrees from those of the individual crystal. Thus, for instance, the electrical conductivity of a W-compact sintered at 550 degrees C ($\vartheta \simeq 0,2$) amounts to only about 2% of that of an individual W crystal, while the density is about 67%. Rate of sound propagation and E-modulus lie between these values. These differences diminish with rising sintering temperatures. In order to explain it, reference is made to the structural sensitivity of the properties of sintered bodies and on this basis the values of the various properties are explained as a consequence of the elementary structure of the sintered body. Conversely, use is made of the properties for statements concerning the structure of the sintered material, in particular concerning the bonds connecting the individual crystals. (Author)

Agte, C. and Vacek, J.
TUNGSTEN AND MOLYBDENUM. 1963, 293p. 410 refs. NASA Technical Trans. F-135; N63-18312.
Available from GPO $1.00

Trans. of mono. Wolfram a Molybden, Prague, 1954 [271p.].

DESCRIPTORS: *Molybdenum, *Tungsten, *Heat resistant metals and alloys, Industrial production, Ductility, Mechanical working, Electrical properties, Tungsten alloys, Molybdenum alloys.

Andrievskii, R. A. and Fedorchenko, I. M.
THE EFFECT OF SMALL ADDITIONS OF NICKEL AND COBALT ON THE SINTERING OF IRON POWDER. Apr 62 [8]p. (figs. omitted) 19 refs. [DSIR] NLL M.3770.
Order from OTS or SLA $1.10 63-19788

Trans. of Akad[emiya] Nauk SSSR. Otdel[enie] Tekhn[icheskikh] Nauk. Izvest[iya]: Metall[urgiya i] Topl[ivo] 1961, no. 3, p. 50-54.

DESCRIPTORS: Powders *Iron, Metal powders, *Sintering, *Cobalt, *Nickel, Additives, *Powder metallurgy.

Small nickel additions greatly increase the growth of density and strength during the sintering of iron-powder compacts. As anticipated, additions of colbalt have a much smaller effect. The difference in the effects of nickel and cobalt on the sintering of iron arises from the conditions of formation of defects in the Fe-Ni and Eo-Co pairs. The experimental data obtained confirm our theories on the decisive role which defects of surface layers on powder particles play in shrinkage. The concentration of voids generated during mutual diffusion in the Fe-Ni pair was avaluated. (Author)

Baer, G. and Thomas, H.
PROPERTIES AND STRUCTURES OF IRON COBALT ALLOYS CONTAINING 50% COBALT AND SMALL VANADIUM ADDITIONS. 26 May 55 6p. (refs. figs. omitted).
Order from SLA $1.10 62-16923

Trans. of Zeitschrift für Metallkunde (West Germany) 1954, v. 45, no. 11, p. 651-655.
Another trans. is available from SLA $1.10 as 62-16922 [1962] 7p.

DESCRIPTORS: *Iron alloys, *Cobalt alloys, *Vanadium alloys, Additives, Crystal structure.

For abstract see Technical Translations 8: 616, 1962.

Cherkasov, P. A., Averin, V. V., and Samarin, A. M.
THE EFFECT OF MANGANESE ON THE SOLUBILITY OF OXYGEN IN NICKEL AND IRON-NICKEL MELTS (Vliyanie Margantsa na Rastvorimost' Kisloroda v Nikele i v Zhelezonikelevykh Rasplavakh). July 62 [17]p. (foreign text included) 12 refs. [DSIR] NLL M. 3947.
Order from OTS or SLA $1.60 63-19920

Trans. of mono. Fiz[iko]-Khim[icheskie] Osnovy Proiz[vodstva] Stali [Trudy Konferentsii (no. 5) Moscow, 1959] [Physical and Chemical Principles of Steel Production] Moscow, 1961, p. 33-40.

DESCRIPTORS: *Nickel, Iron alloys, *Oxygen, Solubility, Melting, *Manganese, Steel, Production, *Fused materials.

Decker, A.
INJECTION OF AUXILIARY FUELS INTO BLAST FURNACES. July 63.
Order from BISI £7 BISI-3024

Trans. of mono. Journées Internationales de Sidérurgie, Luxembourg, 1-4 Oct 62. Proceedings, p. 327-345.

DESCRIPTORS: *Blast furnaces, Fuel injection, Luxembourg.

Diev, N. P., Paduchev, V. V. and others.
THE USE OF OXYGEN IN THE COPPER-SMELTING INDUSTRY (Primenenie Kisloroda v Medeplavil'noi Promyshlennosti). May 62 [31]p. (foreign text included) 17 refs. [DSIR] NLL M. 3962.
Order from OTS or SLA $3.60 63-19867

Trans. of mono. Primenenie Kisloroda na Metallurgi-[cheskikh] Prediyatiyakh Urala [Materialy Koordinatsionnogo Soveshchaniya, Sverdlovsk, 20-21 Dec 56] (Utilization of Oxygen by the Ural Metallurgical Enterprises [Papers of] Co-ordinating Conference on the Use of Oxygen in Metallurgy) 1960, p. 117-127.

DESCRIPTORS: *Copper, *Smelting, *Oxygen, Industrial production.

Topics include: Fuel combustion in oxygen-enriched air; combustion of pulverized copper concentrate in oxygen-enriched air; application of steam-oxygen blast in the smelting of copper concentrates; application of steam in the Bessemerization of copper mattes with oxygen; and economic considerations.

Fakidov, I. G., and Afanas'ev, A. Ya.
CONTRIBUTION À L'ÉTUDE DE LA CONDUCTIVITÉ ÉLECTRIQUE DU COMPOSÉ ANTI FERROMAGNÉTIQUE CHROME-ANTIMOINE (Electrical Conductivity of Antiferromagnetic Chromium-antimony Compound). 6p. 11 refs. FR-968.
Order from OTS, ETC or CNRS $0.80 62-28100

Trans. in French of #Fizika Metallov i Metallovedenie (USSR) 1958, v. 6, no. 1, p. 176-177.

DESCRIPTORS: *Chromium alloys, *Antimony alloys, *Antiferromagnetism, Electrical conductance.

Fastje, Dietrich.
CONSTRUCTION AND OPERATION OF THE KRUPP DIRECT REDUCTION PLANT AT WATENSTEDT (Bau und Betrieb der Krupp-Rennanlage in Watenstedt). [1963] [37]p. (foreign text included) 17 refs.
Order from SLA $3.60 63-16740

Trans. of Stahl u[nd] Eisen (West Germany) 1949, v. 69, no. 10, p. 319-325.

DESCRIPTORS: *Industrial plants, *Iron, *Rotary furnaces, Construction, Operation, Ores (Metal sources), Economics, Costs.

Fedorchenko, I. M.
INVESTIGATIONS IN THE FIELD OF ACTIVATED SINTERING. I. SHRINKAGE AND MECHANISM OF THE PROCESS IN ACTIVATED SINTERING (Issledovaniya v Oblasti Aktivirovannogo Spekaniya. I. Ob Usadke i Mekhanizme Protsessa pri Aktivirovannom Spekanii). Aug 62 [28]p. (foreign text included) 32 refs. [DSIR] NLL M. 3943.
Order from OTS or SLA $2.60 63-19925

Trans. of Poroshkovaya Metallurgiya (USSR) 1962, v. 2, no. 2, p. 27-37.

DESCRIPTORS: *Sintering, Oxides, Reduction, Hydrides.

A generalization of investigations of activated sintering is given in this paper on the basis of the data in the literature and the results of studies by the author and his collaborators. Various methods of activated sintering are considered: reduction of oxides, use of hydrides, alloying with small additions of metals and so forth. The possible mechanism of activation in various sintering methods is discussed. (Author)

Himber, F. and Dutilloy, D.
THEORETICAL ASPECTS OF EFFECT OF HIGH TOP PRESSURE ON THE OPERATION OF THE BLAST FURNACE. July 63.
Order from BISI £5 BISI-3028

Trans. of mono. Journees Internationales de Sidérurgie, Luxembourg, 1-4 Oct 62. Proceedings, p. 202-212.

DESCRIPTORS: *Blast furnaces, Luxembourg, Coke, Pressure, Iron, *Ores (Metal sources), Reduction.

Hofmann, E. E.
POSSIBILITIES FOR THE CONSTRUCTION OF HOT-BLAST STOVES FOR ACHIEVING MAXIMUM BLAST TEMPERATURES. Aug 63.
Order from BISI £4 10s BISI-3025

Trans. of mono. Journées Internationales de Sidérurgie, Luxembourg, 1-4 Oct 62. Proceedings, p. 483-494.

DESCRIPTORS: *Blast furnaces, *Heaters, Design, Temperature, Luxembourg.

Hüttig, G. F. and Vidmajer, A.
ON THE PREPARATION OF INTIMATE POWDER MIXTURES OF IRON AND COPPER: A CONTRIBUTION TO THE CHEMISTRY OF THE MIXTURE (Notiz über die Herstellung Inniger Pulverförmiger Gemische aus Eisen und Kupfer; ein Beitrag zur Chemie der Gemische). [1963] [14]p. (foreign text included) 13 refs.
Order from SLA $1.60 63-16838

Trans. of Zeitschrift für Anorganische und Allgemeine Chemie (East Germany) 1953, v. 272, p. 40-44.

DESCRIPTORS: *Metal powders, *Iron, *Copper, Mixtures, Oxalates, Sintering, Particle size.

Iron and copper were precipitated together as oxalates and reduced to the metallic mixture at elevated temperature, with hydrogen. The sinterings prepared from these show "constitutional" properties which deviate more from those calculated by the rule of mixture, the finer is the mixture. (Author)

Hüttig, Gustav F. and Arnestad, Karl.
THE RATES OF RUST OF SINTERED IRON POWDER IN RELATION TO THE PREHEATING TEMPERATURES (Die Rostgeschwindigkeit von Gefritteten Eisenpulvern in Abhängigkeit von der Vorerhitzungstemperatur. [Über Reaktionen fester Stoffe: 127, Mitteilung)]. Communication 127 concerning Reactions of solid Bodies. [1963] 16p. (foreign text included) 8 refs.
Order from SLA $1.60 63-16751

Trans. of Z[eitschrift] für Anorg[anische] u[nd] Allg[emeine] Chemie (Germany) 1942, v. 250, no. 1, p. 1-9.

DESCRIPTORS: *Corrosion, Sintering, *Powder metals, *Iron, Temperature, Powders.

Kirscht, Hubert.
THE EFFECT OF SMALL AMOUNTS OF COPPER, NICKEL AND COBALT UPON THE OXIDATION PROCESS WITH IRON (Einfluss Kleiner Mengen von Kupfer, Nickel und Kobalt auf die Oxydationsvorgänge beim Eisen). [1963] [4]p. (foreign text included) 2 refs.
Order from SLA $1.10 63-16754

Trans. of Stahl und Eisen (Germany) 1932, v. 52, 21 Jan, p. 71.

DESCRIPTORS: *Iron, Oxidation, Iron compounds, Oxides, *Copper, *Nickel, *Cobalt, Alloys, Reduction (Chemistry). Dehydrogenation, Pressure, Solubility, Crystal structure.

Klyuev, M. M. and Topilin, V. V.
THE EFFECT OF ELECTROSLAG REMELTING OF HIGH-ALLOY STEELS AND ALLOYS ON THE REMOVAL OF THEIR NON-METALLIC INCLUSIONS (Vliyanie Elektroshlakovogo Pereplava Vysokolegirovannykh Stalei i Splavov na Udalenie Nemetallicheskikh Vklyuchenii). May 62 [23]p. (foreign text included) 11 refs. [DSIR] NLL M. 3945.
Order from OTS or SLA $2.60 63-19922

Trans. of Izvest[iya] Vys[shikh] Ucheb[nykh] Zaved[enii]. Chernaya Met[allurgiya] (USSR) 1962, no. 1, p. 78-89.

DESCRIPTORS: *Electroslag process, *Steel, Alloys, Melting, *Fused materials, *Liquid metals, Impurities, Material removal.

A relationship was established between the decrease in contamination with non-metallic inclusions during electroslag remelting and the degree of oxidation of consumable electrodes during melting: the lower the electrode oxidation capacity, the greater is the purification effect during remelting. A study was also made of the change in the composition of non-metallic inclusions during the remelting of ball-bearing, stainless and heat-resistant steels, resulting from an increase in the amounts of silica and iron, chromium and manganese oxides, and a decrease in the amount of alumina. (Author)

Kornilov, I. I., Pryakhina, L. I., and Ozhimkova, O. V.
THE EFFECT OF THE TIME FACTOR ON THE CHARACTER OF THE DIAGRAM OF COMPOSITION VS. HEAT-RESISTANCE FOR ALLOYS OF THE FIVE-COMPONENT SYSTEM Ni-Cr-W-Ti-Al. Apr 62 [8]p. (figs. omitted) 5 refs. [DSIR] NLL M. 3771.
Order from OTS or SLA $1.10 63-19787

Trans. of Issled[ovaniya] po Zharoproch[nym] Splavam (USSR) 1960, v. 6, p. 278-283.
Another trans. is available from OTS $1.60 as AD-256 676, MCL-1028, 20 Aug 61, 10p.

DESCRIPTORS: *Heat resistant metals and alloys, *Nickel alloys, Aluminum alloys, Chromium alloys, Titanium alloys, Tungsten alloys, Solutions, Solids, Mechanical properties, Deformation, Phase studies, Time.

The maxima of creep resistance in isothermal composition vs. creep-resistance diagrams depend not only on temperature but also on testing time. Depending on the duration of testing, these maxima become displaced in the direction of supersaturated solid solutions. For short-time service (up to several hundred hours), it is desirable to use high, heat-resisting alloys with large degrees of structural heterogenization, in which excess phases are formed during special types of heat-treatment or in service. For long-time service (tens, hundreds and thousands of hours) at high temperatures, it is desirable to use high creep-resisting alloys with

a lower degree of solid-solution supersaturation. Ideal creep-resisting alloys for prolonged service could be provided by high-alloy, strengthened solid solutions which are thermally stable and undergo no phase transformations in the solid state during their whole service time. (Author)

Kornilov, I. I.
THE HIGH-TEMPERATURE STRENGTH OF INTERMETALLIC COMPOUNDS. Apr 62 [10]p. (figs. omitted) 24 refs. [DSIR] NLL M. 3772.
Order from OTS or SLA $1.10 63-19786

Trans. of Akad[emiya] Nauk SSSR. Otdel[enie] Tekh[nicheskikh] Nauk. Izvest[iya]: Metall[urgiya i] Topl[ivo] 1961, no. 6, p. 130-136.

DESCRIPTORS: *Intermetallic compounds, High temperature research, Mechanical properties, Chemical bonds, *Nickel compounds, *Aluminum compounds, *Titanium compounds, *Heat resistant metals and alloys.

Intermetallic compounds with different types of chemical bond are characterised by specific properties which are different from those of either the pure metals or their solid solutions. These compounds have higher hardness and strength than the pure metals and their solid solutions. They show strength loss at higher temperatures than their constituent elements. The retention of the high strength of intermetallic compounds on heating is due to the high strength of their chemical bond. Among the many compounds of nickel, Ni_3Al has high creep resistance and retains sufficient ductility. Many elements, which are capable of forming limited solid solutions with Ni_3Al, produce a further increase in its creep resistance. The intermetallic compounds Ti_6Al, Ti_3Al and TiAl, as well as alloys based on them, are more creep resistant than pure titanium. Intermetallic compounds provide a suitable base for a new class of heat-resisting alloys. (Author)

Kroll, W. J.
MELTING BY THE ELECTRIC ARC IN VACUUM. [1963] 20p. 17 refs.
Order from SLA $1.60 63-16862

Trans. of Metall (West Germany) 1957 [v. 11, no. 1] p. 1-7.

DESCRIPTORS: *Titanium, *Zirconium, Melting, *Electric arcs, *Glow discharges, Gases, Absorption, *Vacuum systems, *Electrodes, Porous metals, Impurities, Hydrogen, Chlorides, Magnesium, Vaporization.

Topics include: Electrical phenomena in gases in a partial vacuum; the glow discharge; the sponge electrode and its behavior; the hydrogen problem; the proportion of sponge electrodes in vacuum melting; and, melting under low partial pressure.

Lange, Heinz.
THE SIGNIFICANCE OF ANODES IN ELECTROCHEMISTRY (Die Bedeutung der Anoden in der Galvanotechnik). [1963] 8p. (foreign text included).
Order from SLA $1.10 63-16777

Trans. of das Metall (Germany) 1925, no. 46, p. 197-198.

DESCRIPTORS: *Anodes, Electrochemistry, *Electroplating, Brass, Copper, Zinc, Nickel, Tin, Carbon, Silver, Gold, Platinum, Electroplating solutions.

Liger, J.
STAINS ON ELECTROLYTIC DEPOSITS. [1963] 6p.
Order from SLA $1.10 63-16866

Trans. of Galvano (France) 1957, v. 26, no. 241, p. 37-39.

DESCRIPTORS: *Electrodeposition, Plating, *Metal coatings, Porosity, Discoloration, Inhibition, Cleaning.

Litvakovskaya, Y. L.
MATERIALS FOR METAL MOULDS AND THEIR LIFE (Material Kokilei i Ikh Stoikost'). July 62 [28]p. (foreign text included) 22 refs. [DSIR] NLL M. 3956.
Order from OTS or SLA $2.60 63-19873

Trans. of mono. Poluchenie Izdelii iz Zhidkikh Metallov s Uskorennoi Kristallizatsiei [Manufacture of Objects from Liquid Metals by Accelerated Crystallization, Moscow] 1961, p. 56-68.

DESCRIPTORS: Liquid metals, *Life expectancy, Molding materials, *Molding.

Metal moulds fail as a result of the combined effect of alternating thermal stresses and the thermo-chemical action of the metal and the environment. The latter cause of failure predominates under conditions of mould overheating and the former during intensive exploitation of water-cooled moulds. For some conditions, the mould metal should be oxidation-resistant, and for others strong and ductile. The limiting factors for the durability of cast iron moulds are the oxidation resistance and the tensile strength of the material, and for steel moulds - the strength and its ratio to the yield point. The higher the value of this ratio, the more favorable are the conditions of operation of steel moulds from the point of view of securing the least work of deformation per cycle. The use of moulds from materials of high thermal conductivity and thin-walled metal moulds with liquid cooling reduce to minimum, the stresses due to thermal shock, which are the main cause of failure of metal moulds. The frequency of casting in such moulds is practically unlimited; in addition, such moulds secure the optimum conditions and directionality of solidification of castings. (Author)

Luyken, W. and Kirchberg, H.
PREPARATION OF IRON POWDERS FOR SINTERED SUBSTANCES FROM PUREST IRON ORE CONCENTRATES (Herstellung von Eisenpulver für Sinterkörper aus Reinsten Eisenerzkonzentraten). [1963] [41]p. (foreign text included) 13 refs.
Order from SLA $4.60 63-16759

Trans. of Archiv für Metallkunde (Germany) 1947, [v. 1] no. 7/8, p. 335-345.

DESCRIPTORS: *Iron, *Powder metals, Ores (Metal sources), Magnetite, Material separation, Reduction (Chemistry), Iron compounds, Oxides, Hydrogen, Sintering, *Powder metallurgy.

In a series of examinations with North Swedish magnetite ores it was determined that these ores by means of wet mechanical methods after a cominution to 0.25 mm, could be worked to pure ore powders with less than 0.36% SiO2 and that these concentrates are suitable for the preparation of iron powders for powder metallurgical purposes. The reduction of the ore powders in a hydrogen stream shows that they can best be carried out between 600 and 650° with a resting furnace charge. The hydrogen supply should expediently be chosen very high. Larger quantities of iron powder with oxygen residues between 0.7 and 1.5% were prepared. The sintered bodies prepared from the reduction powder have similar qualities throughout as those from other iron powders. (Author)

Michard, J.
VIEWS ON THE EVOLUTION OF THE BLAST FURNACE TECHNIQUE AND OF ITS WORKING PROCESS. Dec 62 [9]p. 1 ref.
Order from SLA $1.10 63-10651

Trans. of mono. (paper presented at) Conference on the Use of Refractories in Metallurgy (no. 2) Paris, 21 Mar 62.

DESCRIPTORS: *Blast furnaces, Operation, *Refractory materials, Metallurgy.

Mostovich, V. Ya. and Uspenskii, G. S.
METAFERRITES OF CUPRIC OXIDE (Metaferrit Okisi Medi). [1963] [43]p. (foreign text included) 7 refs.
Order from OTS or SLA $1.49 63-16762

Trans. of Tsvetnye Metally (USSR) 1930, no. 7, p. 960-977.

DESCRIPTORS: *Oxides, *Copper compounds, *Ferrites.

Naeser, Gerhard and Zirm, Franz.
ROLLING STRIPS FROM IRON POWDER. Paper consists of excerpts from doctoral thesis of Franz Zirm. [1963] [35]p. 28 refs.
Order from SLA $3.60 63-16763

Trans. of Stahl und Eisen (West Germany) 1950, v. 70 [no. 22] p. 995-1003 [Verein Deutscher Eisenhuttenleute (West Germany). Berichte-6].
Another trans. is available from SLA mi$2.40, ph$3.30 as 60-18611, 8 Nov 50, 20p.

DESCRIPTORS: *Iron, Powder metals, Powder metallurgy, Sheets, *Rolling mills, *Mechanical working.

For abstract see Technical Translations 4: 678, 1960.

Neusinger, Hanns.
EVALUATION OF ELONGATION MEASUREMENTS ON COPPER WIRE (Zur Beurteilung von Dehnungsmessungen an Kupferdraht). [1963] [12]p. (foreign text included).
Order from SLA $1.60 63-18046

Trans. of Draht (West Germany) 1962, v. 13, no. 11, p. 634-636.

DESCRIPTORS: *Copper wire, Measurement, Stretch forming.

Osokin, A. M.
SELECTION OF MOULD BLACKING AND MOULD LIFE (Podbor Kokil'nykh Krasov i Stoikost' Kokilei). July 62 [10]p. (foreign text included). [DSIR] NLL M.3957.
Order from OTS or SLA $1.10 63-19872

Trans. of mono. Poluchenie Izdelii iz Zhidkikh Metallov s Uskorennoi Kristallizarsiei [Manufacutre of Objects from Liquid Metals by Accelerated Crystallization, Moscow] 1961, p. 77-81.

DESCRIPTORS: Liquid metals, *Molding materials, Steel.

Moulds made of grey cast iron of grade SCh 12-28 withstood an average of 4500 castings. After 4500 castings under the same conditions, steel moulds showed no visible changes compared with their original condition. It was established in these tests that by observing the above-described technology, it is possible to increase substantially the life of permanent moulds made of ordinary grey cast iron SCh 12-28. Variations in the chemical composition of cast iron SCh 12-28 have no marked influence on mould life. Aluminizing does not increase the life of cast iron moulds. The life of moulds made of low-carbon steel (St. 2) is much longer than that of cast iron moulds. (Author)

Ponomarev, V. D., Buketov, E. A. and Kononenko, G. A.
EXTRACTION DU SÉLÉNIUM DES BOUES PROVENANT DE LA FABRICATION D'ACIDE SULFURIQUE (Extraction Selenium from Sulfuric Acid Plant Slimes). 10p. 5 refs. FR-1734.
Order from OTS, ETC or CNRS $0.80 62-26482

Trans. in French of Izvestiya Vysshikh Uchebnykh Zavedenii. Tsvetnaya Metallurgiya (USSR) 1959, v. 2, no. 6, p. 85-92.
Another trans. is available in English from OTS or SLA $5.60 in 60-11878, JPRS-2978, 10 July 60, 55p.

DESCRIPTORS: Sulfuric acid, Production, *Selenium, Sewage, Solvent extraction, *Flotation.

Poos, A. and Linder, R.
COMPARATIVE STUDY OF THE REDUCIBILITY OF SINTER AND PELLETS BY THREE DIFFERENT TEST METHODS. July 63.
Order from BISI £4 5s BISI-3032

Trans. of mono. Journées Internationales de Sidérurgie, Luxembourg, 1-4 Oct 62. Proceedings, p. 117-126.

DESCRIPTORS: Test methods, *Pellets, *Sinters, Reduction, Luxembourg.

Rainer, Helmut.
THE MAGNETIC PROPERTIES OF CU-FE SINTERED OBJECTS (Über die Magnetischen Eigenschaften von Cu-Fe-Sinterkörpern). [1963] [16]p. (foreign text included) 7 refs.
Order from SLA $1.60 63-16775

Trans. of [das] Metall (West Germany) 1950, v. 4, 19/20, p. 416-420.

DESCRIPTORS: *Powder alloys, *Copper alloys, *Iron alloys, Magnetic properties, Density, Sintering.

The residual magnetism, coercive force, saturation and demagnetization in relation to copper content and sintering temperature were determined for pressed bodies of copper and iron which were prepared by two different methods. The density and length undergo their maximum change between 700 and 900°. Samples with 5 and 10% copper showed a decrease in density or increase in length between 900 and 1100°. The saturation in the course of the sintering shows various maximum and minimum values which can be attributed to the reduction of the residual oxides, diffusion of copper into iron and the shrinkage of pores. The coercive force of the samples in the course of sintering decreases in the case of samples containing up 1% copper. Samples with 5 and 10% copper at higher sintering temperatures show an increase in resistance; differences depending on the method of preparation are to be observed in these cases. In the case of the samples of the mixed series the residual magnetism begins to increase at significantly lower temperatures than in the case of the electrochemically prepared samples. The increase of residual magnetism does not proceed in conformity with the increase in density. After heating to 1100° the properties of both series are identical. (Author)

Roederer, A., Boudier, Y., and Dancoisne, P.
THE USE OF PROBES IN CONTROLLING BLAST FURNACE OPERATIONS. July 63.
Order from BISI £4 10s BISI-3169

Trans. of mono. Journées Internationales de Sidérurgie, Luxembourg, 1-4 Oct 62. Proceedings, p. 165-174.

DESCRIPTORS: *Blast furnaces, Operation, *Gas flow, *Control systems, Coke, Costs, Sampling, Instrumentation.

Schenck, H., Frohberg, C., and Hoffman, K.
MEASUREMENT OF THE VISCOSITY OF MOLTEN METALS AT HIGH TEMPERATURES. July 63.
Order from BISI £4 15s BISI-3248

Trans. of Archiv für das Eisenhuttenwesen (West Germany) 1963, v. 34 [no. 2] p. 93-100.

DESCRIPTORS: *Liquid metals, Viscosity, High temperature research, *Tin, *Lead, *Silver, *Copper, *Iron, *Nickel, Melting, Fused materials.

Schürmann, E. and Bülter, D.
THE RELATIONSHIP OF CALORIFIC, MATERIAL AND REDUCTION BALANCES OF THE BLAST FURNACE UNDER VARIOUS OPERATING CONDITIONS. July 63.
Order from BISI £9 BISI-3026

Trans. of mono. Journées Internationales de Sidérurgie, Luxembourg, 1-4 Oct 62. Proceedings, p. 89-112.

DESCRIPTORS: *Blast furnaces, Operation, Heat, Reduction, Steam, Hydrocarbons, Injection.

Sengfelder, George.
BENEFICATION PROCESS OF THE RESEARCH INSTITUTE FOR DOGGER ORE RESULTS ALREADY OBTAINED IN LARGE SCALE USE. (Die Aufbereitungsverfahren der Studiengesellschaft für Doggererze unter Berücksichtigung der Bisher im Grossbetrieb Erzielten Ergebnisse). [1963] [15]p. (foreign text included) 3 refs.
Order from SLA $1.60 63-16824

Trans. of Stahl und Eisen (Germany) 1937, v. 57, no. 26, p. 732-735.

DESCRIPTORS: *Ores (Metal Sources), *Iron, Scientific research, Test facilities, Tests, Smelting, Metallurgy.

Suhrmann, Rud. and Clusius, Klaus.
THE PREPARATION OF PURE ALKALI METALS. [1963] 10p. (figs. omitted) 14 refs.
Order from SLA $1.10 63-16170

Trans. of [Zeitschrift für Anorganische und Allgemeine Chemie] (Germany) 1926 [v. 152] p. 52-58.

DESCRIPTORS: *Alkali metals, Purification, Preparation, Degasification.

Thowless, Orlando Morton.
IMPROVEMENT AT THE APPARATUS FOR THE MANUFACTURE OF SODIUM AND POTASSIUM. [1963] 3p. (drawings omitted).
Order from OTS or SLA $1.10 63-16153

Trans. of German patent 45 378, cl. 75: (soda, potash and alkalies) appl. filed 26 Sep 1887, issued 29 Nov 1888.

DESCRIPTORS: *Sodium, *Potassium, Industrial production, Heat treatment.

Tonn, Willi and Günther, Heinrich.
COMMUNICATION ON THE FATIGUE TESTING OF TIN-LEAD SOLDERS. [1963] 10p. 8 refs.
Order from SLA $1.10 63-16854

Trans. of [Zeitschrift für Metallkunde (Germany) 1936, v. 28, p. 237-239].
Another trans. is available from SLA mi$1.80, ph$1.80 as 59-17280 [1959] 7p.

DESCRIPTORS: Soldering, *Soldering alloys, *Tin, *Lead, Fatigue (Mechanics), *Soldered joints, Metals.

Trömel, Gerhard and Gedschold, Hermann.
THE PRODUCTION OF VANADIUM FROM SLAGS RESULTING IN STEEL PRODUCTION (Die Gewinnung von Vanadin aus Schlacken, die bei der Stahlerzeugung Anfallen). [1963] [23]p. (foreign text included) 12 refs.
Order from SLA $2.60 63-14375

Trans. of Archiv für das Eisenhüttenesen (West Germany) [1948] v. 19, p. 119-124.

DESCRIPTORS: *Vanadium, Production, *Slags, Steel, Manganese, Spinels, Sodium compounds, Chlorine compounds, Carbon compounds, Oxides, Manufactruing methods.

After a brief survey on the industrial experiences in the obtaining and processing of vanadium-containing slags, experiments are reported on for determining in the laboratory the conditions for as complete obtaining of pure vanadium as possible. The constitution of the slags was determined by X-ray and microscopic investigations. The vanadium is present as a predominantly manganese-containing spinel. Roasting experiments with pure iron-vanadium and manganese-vanadium spinels provided information on the most favorable conditions for the processing of industrial slags. For an explanation of "reversibility" consideration was given to the property of sodium vanadate of passing over into insoluble compounds on cooling from the melt under oxygen delivery. (Author)

Tsal'man, L. B.
ELIMINACION DE DEFORMACIONES EN LAS CONSTRUCCIONES SOLDADAS, MEDIANTE SOPLETE OXIACETILENICO (Pravka Svarnykh Konstruktsii Nagrevom Atsetileno-Kislorodnym Plamenem) (Elimination of Welded Structure Deformations Employing the Oxyacetylene Blowtorch). 12p. CID: 62-237.
Order from OTS, ETC or CID $0.80 62-29237

Trans. in Spanish of Svarochnoe Proizvodstvo (USSR) 1959, no. 3, p. 29-31.

DESCRIPTORS: *Welds, Arc welding, *Deformation, *Torches, Acetylenes, Oxygen.

Überreiter, K.
INVESTIGATION OF BRASS PLATING. [1962] 4p. (figs. omitted).
Order from SLA $1.10 63-10020

Trans. of Angew[andte] Chemie (West Germany) 1947 [v. 59a] no. 3, p. 61-63.

DESCRIPTORS: *Brass, Electroplating, *Electroplating solutions, Temperature, Electric currents.

Volkov, V. L., Tolmasskii, I. S., and Fridenberg, A. E.
CARBONYL FERRO POWDERS. July 62 [10]p. (foreign text included) 8 refs. [DSIR] NLL M. 3960.
Order from OTS or SLA $1.10 63-19869

Trans. of #Akad[emiya] Nauk SSSR. Izvest[iya]. Ser[iya] Fiz[icheskaya] 1961, v. 25, no. 12, p. 1483-1486.

DESCRIPTORS: *Carbonyl radicals, *Iron compounds, Powders, Metal powders, *Powder metallurgy, *Magnetic materials.

Wagener, J. M. and Majerus, N.
REPORT OF EXPERIMENTS ON THE INJECTION OF LIGHT FUEL IN THE HOT BLAST MAIN OF BLAST FURNACE II AT BELVAL(ARBED). July 63.
Order from BISI £3 10s BISI-3170

Trans. of mono. Journees Internationales de Siderurgie, Luxembourg, 1-4 Oct 62. Proceedings, p. 433-441.

DESCRIPTORS: *Blast furnaces, Luxembourg, Thermal insulation, *Fuel injection.

Ferrous Metals

Bensch, Emil.
THE PROPERTIES OF SINTERED IRON COMPONENTS AS DEPENDENT ON THE TYPE OF POWDER AND ITS CONDITIONS OF MANUFACTURE. [1963] [38]p. 23 refs.
Order from SLA $3.60 63-16779

Trans. of Stahl und Eisen (West Germany) 1951, v. 71, no. 21, p. 1103-1114 (Verein Deutscher Eisenhüttenleute (West Germany). [Berichte]-11).

DESCRIPTORS: *Iron, *Sintering, *Powder metallurgy, Porous metals, Manufacturing methods, Mechanical properties.

Topice include: The inherited properties of compact and porous powders; edge strength, shrinkage, and surface characteristics of powders; freedom from oxygen and chemical purity of the powder, compression strength with lower pressure; dependence of the mechanical properties on density; double, and multiple compression processes as well as a hot pressing process; and, properties of unalloyed iron powder components.

Bogatyrev, Yu. M., and Eremina, V. P.
DÉFORMATION DE L'ACIER TREMPÉ SUPERFICIELLEMENT (Deformation of Surface-hardened Steel). 4p.
Order from OTS, ETC or CNRS $0.80 62-28098

Trans. in French of Metallovedenie i Termicheskaya Obrabotka Metallov (USSR) 1958, no. 12, p. 35-41.
Another trans. is available in English from HB $4.90 as HB-4447. May 59, 2300 words.

DESCRIPTORS: *Steel, Surfaces, *Hardening, High frequency, *Deformation.

Esche, W., Haucke, M. and others.
DESULPHURISATION OF PIG IRON WITH POWDERED LIME OUTSIDE THE BLAST FURNACE. Aug 63.
Order from BISI £8 BISI-3210

Trans. of Stahl und Eisen (West Germany) 1963, v. 83 [no. 5] p. 270-281.

DESCRIPTORS: Blast furnaces, *Calcium compounds, Oxides, Powders, *Iron, *Castings, *Desulfurization.

Fievet, M. R.
THE CONTINUOUS CASTING OF STEEL AT THE CAIL WORKS AT DENAIN. [1963] [36]p.
Order from SLA $3.60 63-16870

Trans. of French language article from unidentified source, n.d.

DESCRIPTORS: *Steel, *Casting, Industrial equipment, Rolling mills, Microstructure, Crystallization, Grain structures (Metallurgy).

Granat, I. Ya.
BASIC FACTORS GOVERNING THE TECHNOLOGY OF THE CONTINUOUS CASTING OF STEEL IN PROCESSES IN WHICH THE NEWLY FORMED BILLET SKIN SLIDES AGAINST THE MOLD. Paper from All-Union Conference on the Continuous Casting of Steel (no. 1) 17-19 Oct 55. Apr 60 [17]p. BISI Trans. 1613; [DSIR] NLL M.4937.
Order from OTS or SLA $1.60 62-25882

Trans. of mono. [Nepreryvnaya Razlivka Stali] (Continuous Casting of Steel) Moscow, 1956, p. 145-155.
Another trans. is available from OTS or SLA $1.60 as 62-14669 [1960] [15]p.

DESCRIPTORS: *Steel, *Casting, Steel castings, Molding, Liquid metals, Friction, Surfaces, Mechanical properties.

Following a general discussion of the continuous casting of steel, these specific topics are investigated: advance of the crystallization front, strength of the peripheral shell or skin and the elimination of sticking, formation of the axial zone of the billet, and mold wall thickness.

Habraken, L.
SEVERAL PROBLEMS ASSOCIATED WITH THE BAINITE STRUCTURE. [Mar 63] [8]p. (figs. omitted) 14 refs.
Order from SLA $1.10 63-16943

Trans. of die Technik (East Germany) 1962, v. 17, no. 6, p. 440-443.

DESCRIPTORS: *Bainite, Microstructure, *Iron, Phase transitions, *Steel, Transformations.

Heller, W. and Jäniche, W.
CHANGE OF MECHANICAL PROPERTIES OF RAIL STEELS OWING TO HYDROGEN EFFUSION. July 63.
Order from BISI £6 5s BISI-3255

Trans. of Stahl und Eisen (West Germany) 1963, v. 83 [no. 3] p. 145-154.

DESCRIPTORS: *Steel, *Reinforcing materials, Mechanical properties, *Hydrogen, *Railroad tracks, Diffusion.

Klinger, Paul and Koch, Walter.
CONTRIBUTIONS ON ELECTROLYTIC DETERMINATION OF NONMETALLIC INCLUSIONS IN STEEL (A PROCESS FOR THE DETERMINATION OF SILICIC ACID, ALUMINA, FERROUS OXIDE, MANGANOUS OXIDE, FERRIC SULFIDE AND MANGANIC SULFIDE), [1963] 42p. 28 refs.
Order from SLA $4.60 63-16864

Trans. of [Archiv für das Eisenhüttenwesen (Germany) 1938, v. 11, p. 569-582 (Verein Deutscher Eisenhüttenleute (Germany). Berichte-124)].

DESCRIPTORS: *Steel, Impurities, Electrolysis, Electrolytes, Volumetric analysis, *Silicic acids, *Aluminum compounds, Oxides, *Iron compounds, *Manganese compounds, *Sulfides.

Kosmider, H., Neuhaus, H. and others.
THE PHYSICAL AND CHEMICAL PROCESSES IN CASTING AND HARDENING OF STEEL. [1963] 26p. 20 refs.
Order from SLA $2.60 63-16855

Trans. of German language article from unidentified source, n.d.

DESCRIPTORS: *Steel, *Casting, Hardening, Metallography, Radiography, Temperature.

Lajcok, K. and Chovanec, J.
THE PRODUCTION OF SPIRAL WELD TUBES. July 63.
Order from BISI £3 15s BISI-3290

Trans. of Hutnik (Czechoslovakia) 1962, v. 12, no. 7, p. 336-339.

DESCRIPTORS: *Pipes, *Welds, Production, *Steel, Czechoslovakia, Helixes.

Meyer, Hans-Heinz and Schluter, Herman.
DEVELOPMENT AND STATUS OF DYNAMO AND TRANSFORMER SHEET MANUFACTURE. [1963] [41]p. 93 refs.
Order from SLA $4.60 63-16842

Trans. of Stahl und Eisen (West Germany) 1953, v. 73, p. 1706-1717.

DESCRIPTORS: *Steel, Sheets, Metal plates, *Transformers, *Magnetic properties, Production, Mechanical working, Heat treatment, Hydrogen, Annealing.

The most important literature of the last 15 years on developments in the manufacture of dynamo and transformer sheet are cited and compared with the author's own results. Improvement over the best current watt loss of 0.8 to 0.9 w/kg at B10, will not be achieved in large scale production with hot rolled transformer sheet. In order to get losses as low as these the steel must have the lowest possible carbon, manganese, sulfur, phosphorous, chromium and copper. From results in service it has been shown that oxygen also has a bad effect, especially when it is present in the form of aluminum oxide. Possibly the better results with electric furnace steel should be attributed to the small oxygen content in the sheet. When rolled under hydrogen, the two types of steel show hardly any difference in magnetic properties. The effect of rolling conditions and of heat treatment on transformer sheet is also discussed. High annealing temperatures usually give especially good loss values. Various methods to decrease the danger of blocking are pointed out. Especially favorable magnetic properties are obtained by annealing under hydrogen. (Author)

Sauerwald, F.
THE PRESENT STATUS OF THE INVESTIGATIONS INTO THE EQUILIBRIUM SYSTEMS IN STEEL MAKING. [1963] [43]p. [refs. omitted].
Order from SLA $4.60 63-16774

Trans. of Archiv f[ür das] Eisenhüttenwesen (Germany) 1932, v. 5, Jan, p. 355-366.

DESCRIPTORS: *Steel, *Smelting, Chemical equilibrium, Iron, Oxides, Calcium, Carbon, Silicon, Manganese, Phosphorous, Sulfur, Slags.

Schenck, Rudolf, Franz, H., and Willeke, H.
EQUILIBRIUM INVESTIGATIONS ON REDUCTION, OXIDATION AND CARBONIZATION PROCESSES IN IRON, IX. [1963] 44p. 7 refs.
Order from SLA $4.60 63-16859

Trans. of Zeitschrift für Anorganische und Allgemeine Chemie (Germany) 1930, v. 184, p. 1-38.

DESCRIPTORS: *Iron, Processing, *Carbonization, *Oxidation, Reduction, *Chemical equilibrium, thermodynamics.

Schuller, H.-J., Schwaab, P., and Schwenk, W.
THE EFFECT OF THE POTENTIAL ON THE INTERCRYSTALLINE CORROSION OF A TEMPERED AUSTENITIC CHROME-NICKEL STEEL. Aug 63.
Order from BISI £8 BISI-3177

Trans. of Archiv für das Eisenhüttenwesen (West Germany) 1962, v. 33 [no. 12] p. 853-862.

DESCRIPTORS: *Steel, Nickel alloys, Chromium alloys, Austenite, *Corrosion, Crystal structure, Electric potential.

Siepmann, Heinrich.
A NEW METHOD FOR THE REDUCTION OF IRON POWDERS (Ein Neues Verfahren zur Reduktion von Eisenpulvern). [1963] [25]p. (foreign text included) 2 refs.
Order from SLA $2.60 63-16839

Trans. of Stahl u[nd] Eisen (West Germany) 1953, v. 73, no. 6, p. 360-364 (Verein Deutscher Eisenhüttenleute (West Germany). [Berichte]-19.

DESCRIPTORS: *Powder metallurgy, *Iron, *Powders, *Metal powders, Reduction, Manufacturing methods.

In the newly developed column method for reduction of iron powder the reducing gas flows from below through a porous base plate into a reactor and holds the powder to be reduced in a constant vortex motion by means of its kinetic energy. Thus all of the powder surface takes part in the reduction, so that a quick and uniform transformation is to be expected and an inherent disadvantage of other methods, -the sintering together of the powder particles during reduction, -is avoided. The plant for carrying out the vortex reduction method can be so designed that continuous operation is possible. In an experimental unit the oxygen content of DPG powder was reduced from 3% to 0.2 to 0.4%, while the temparature was below 1830°F. The especial advantages of the process and its capacity are here discussed. (Author)

Meyer, Kurt.
DEVELOPMENT OF IRON ORE PELLETIZATION. [1963] 24p. 25 refs.
Order from SLA $2.60 63-16850

Trans. of Stahl und Eisen (West Germany) 1956, v. 76, no. 10, p. 588-595 [Verein Deutscher Eisenhüttenleute (West Germany). Berichte-72 and 294].

DESCRIPTORS: *Pellets, *Ores (Metal sources), *Iron, Blast furnaces, Sintering.

Topics include: Historical development; charging possibilities and locating problems; characteristics of the pelletization process; selection of the raw materials; shaping; hardening of the fresh briquet; production amout; influence of the pellets on the operating data of the blast furnace; pelletization by the simultaneous executing of several reactions; and, conclusions for induced draft sintering.

Postnov, L. M. and Gulyaev, B. B.
AN INVESTIGATION OF THE MECHANICAL PROPERTIES OF STEEL DURING SOLIDIFICATION AND AN ANALYSIS OF THE PROCESS OF THE FORMATION OF HOT CRACKS DURING CONTINUOUS CASTING. Paper from All-Union Conference on the Continuous Casting of Steel (no. 1) 17-19 Oct 55. Apr 60 [14]p. 7 refs. BISI Trans. 1616; [DSIR] NLL M.4939.
Order from OTS or SLA $1.60 62-25884

Trans. of mono. [Nepreryvnaya Razlivka Stali] (Continuous Casting of Steel) Moscow, 1956, p. 212-222. Another trans. is available from OTS or SLA $1.60 as 62-14670 [1962] [12]p.

DESCRIPTORS: Mechanical properties, *Steel, *Fracture (Mechanics), Molding, *Steel castings, Tensile properties.

With an increase in carbon content of steel, the tensile strength increased to a maximum at 0.18% C and then decreased. Medium carbon steels undergo only plastic deformation. An increase in the sulfur content in 35 L steel from 0.01 to 0.05% halved the tensile strength at 1460°C. The tensile strength of various grades of steel was determined. Increased tensile strength provided more resistance to the formation of hot cracks. The coefficient of shrinkage and the ductility are also factors in hot cracking when there is a retardation of shrinkage. In continuous casting, a gap was formed close to the meniscus of the liquid metal in the mold. Mold length can be reduced to decrease the possibility of the mold walls' warping and tearing of the skin. The main forces causing longitudinal tensile stresses are produced by buckling of the mold, sticking of the skin to the mold wall, and friction. The effect of friction was negligible. A calculation was made of the duration of the "pause" for a 270 X 270mm bloom, based on conditions which ensure that the skin is strong enough to withstand the hydrostatic pressure of the liquid steel after opening the mold. Inertia and other forces due to movement of the billet were not taken into account.

Rapatz, Franz.
RELATIONSHIP BETWEEN MACHINABILITY AND OTHER MATERIAL PROPERTIES. [1963] [20]p. 25 refs.
Order from SLA $1.60 63-16841

Trans. of Stahl und Eisen (West Germany) 1953, v. 73, p. 1169-1174 (Verein Deutscher Eisenhuttenleute (West Germany). [Berichte]-85).

DESCRIPTORS: *Machining, Materials, Material forming, Surfaces, Cutting tools, Quality control, Heat treatment, Mechanical properties, *Steel, *Friction, Mechanical working.

Tool life cannot be calculated from tensile strength of the work, except with similar materials. Also v60 values are no generally applicable measure for behavior with machining times of more than an hour, which are much more frequent in industry. It is not acceptable, either, to assume an unlimited straight line relationship for the curve of tool life vs. cutting speed on a log-log chart, and to draw conclusions for a longer period from a short test. The surface appearance of the work is affected by whether a shearing, flowing or brittle chip is obtained, and is damaged by building up at the tool edge. An increase of cutting rate improves surface quality. Improvement can also be made by a special heat treatment aimed to embrittle or to strengthen the material to be machined. The good machinability of automatic steals, both with respect to tool wear and surface appearance, is attributed to the greater brittleness of the steel and the lubricating effect of the inclusions, which decrease the coefficient of friction. (Author)

Skala, J., Mandl, M., and Novak, F.
[A STUDY OF THE INFLUENCE OF DEOXIDISING ELEMENTS ON THE KINETICS OF DESULPHURISATION OF IRON BY MEANS OF S^{35}] PT. II. June 63.
Order from MT $28.75 MT Trans-294

Trans. of Hutnicke Listy (Czechoslovakia) 1962, v. 17, no. 6, p. 383-390.

DESCRIPTORS: *Iron, Reduction (Chemistry), *Sulfur, Isotopes, *Reaction kinetics.

Tarmann, Bruno and Plöckinger, Erwin.
THE SIGNIFICANCE OF THE TUBE BENDING IN THE FORMING OF CONTINUOUS CASTING SYSTEMS FOR STEEL (Die Bedeutung des Strangbiegens in der Gestaltung von Stranggussanlagen für Stahl). Presented as part of the series of lectures "Progress in Continuous Casting of Steel", Leoben, Austria, Nov 61. [1963] [32]p. (foreign text included) 19 refs.
Order from SLA $3.60 63-18013

Trans. of Stahl und Eisen (West Germany) 1962, v. 82, no. 26, p. 1839-1846.

DESCRIPTORS: *Steel, *Casting, Material forming, *Pipes, Mechanical working.

Topics include: hardening of the tube; construction of the continuous casting systems; dependence of the formation of the system parts on the progress of the hardening; the bending of the tube in the completely hardened state and with a still fluid core; dependence of the sensitivity of the tube on the steel composition and on the radius of bending; effects of the tube bending on the construction of the system; and suitability of the use of the bend.

Tikhomirov, V. I., Gofman, I. A., and Ipat'ev, V. V.
OXIDATION RATE OF IRON IN MIXTURES OF STEAM WITH OXYGEN OR WITH HYDROGEN. July 63.
Order from BISI £6 BISI-3199

Trans. of Leningrad U. Uchenye Zapiski (USSR) 1954, no. 175, p. 36-51.

DESCRIPTORS: *Hydrogen, *Oxygen, Steam, Mixtures, *Iron, *Oxidation, Reaction kinetics.

Wever, F. and Bötticher, H.
DETERMINATION OF TEXTURE BY THE REFLECTION METHOD. July 63.
Order from BISI £3 15s BISI-3264

Trans. of Arch[iv für das] Eisenhütt[enwesen] (West Germany) 1963, v. 34 [no. 3] p. 205-210.

DESCRIPTORS: *Steel, Grain structures (Metallurgy), Sampling, Quantitative analysis, Goniometers.

Light Metals

Kolobnev, I. F.
HEAT TREATMENT OF ALUMINUM ALLOYS, tr. by Ch. Nisenbaum. 1963, 308p. 243 refs. PL-480 Comm.
Order from OTS $3.00 63-11136

Trans. of mono. Termicheskaya Obrabotka Alyuminievykh Splavov, Moscow, 1961 [431]p.

DESCRIPTORS: *Aluminum alloys, Heat treatment, Aluminum castings, Alloys.

Classification of heat treatment processes for aluminum alloys
Heat treatment of cast aluminum alloys
Heat treatment of wrought aluminum alloys
Equipment used for heat treatment of aluminum alloys
Technology of alloy heat treatment
Defects and faults due to heat treatment and their correction

Kunitomi, M.
PREPARATION OF METALLIC CALCIUM. Pt. 7 [of] a Fundamental Study of Fused Salts. [1963] 7p. 8 refs.
Order from SLA $1.10 63-16029

Trans. of [Nihon Kagaku Zasshi] (Japan) 1950, v. 71, p. 212-214.

DESCRIPTORS: *Calcium, Fused materials, Electrolysis, Laboratory furnaces, Temperature.

Kunitomi, M.
PRODUCTION OF METALLIC VAPOR. Pt. 6 [of] a Fundamental Study of Fused Salts. [1963] 7p. 4 refs.
Order from SLA $1.10 63-16028

Trans. of [Nihon Kagaku Zasshi] (Japan) 1950, v. 71, p. 40-42.

DESCRIPTORS: *Calcium, *Vaporization, Vapors, Fused materials, Phase studies, Electrolysis, Oxides.

Nonferrous (except light) Metals

PROCESS FOR THE PREPARATION OF ALLOYS OF LEAD WITH ALKALINE EARTH METALS OR MAGNESIUM. 29 Dec 48 [2]p.
Order from OTS or SLA $1.10 63-10972

Trans. of German patent application I 40,266, 20 Feb 39, by Hans Heinrich Hütte Co. (PB-84458A).

DESCRIPTORS: *Lead alloys, Preparation, *Alkaline earth metals, Alloys, *Magnesium alloys, Salts, Mixtures.

The invention involves a process for the preparation of alkali-free alloys of lead with alkaline earth metals or magnesium by reaction of metallic lead with the carbides of the alkaline earths in fusion under a salt cover, characterized by the fact that the salt cover consists of a salf mixture which contains at least two chlorides or at least two fluorides of different alkaline earth metals or of magnesium. (Author)

Kishkin, S. T., Kagan, D. Ya. and others.
THE EFFECT OF HIGH-TEMPERATURE PLASTIC DEFORMATION ON THE MECHANICAL PROPERTIES OF NICKEL-BASE HEAT-RESISTING ALLOYS [AND] THERMOMECHANICAL TREATMENT OF HEAT-RESISTING ALLOYS. [1962] [9]p. (figs. omitted) 4 refs. [DSIR] NLL M. 3767.
Order from OTS or SLA $1.10 63-19790

Trans. of #Metalloved[enie i] Term[icheskaya] Obrab[otka] Met[allov] (USSR) 1962, no. 1, p. 38-42. A partial trans. (p. 38-40) is available from OTS or SLA $2.60 in 63-13914, FTD-TT-62-1169, 14 Nov 62 [24]p.

DESCRIPTORS: *Heat resistant metals and alloys, Nickel alloys, Tungsten alloys, Mechanical properties, Deformation, Plasticity, *Molybdenum alloys, Titanium alloys, Zirconium alloys, Crystallization, Microstructure, Metallography, High temperature research.

Even under conditions of incomplete suppression of recrystallization, TMT of the investigated nickel-base alloys results in a marked improvement in their room-temperature strength characteristics and a strong increase of their ductility. The observed strengthening may be attributed to an increase in the amount of the carbide phase, as well as to a change in the fine crystalline structure of material and some texturization. The substantial improvement in the ductility of the alloys investigated is evidently due to the fact that elimination of intergranular failure permits a full utilization of grain ductility. (Kishkin, et al.) Components from alloy E1437B and its substitutes (E1787 and EI696) intended for operation at 550-650°C. can be advantageously produced by the TMT method, in which hot forging is combined with air cooling. After TMT, such components are either fully or partially recrystallized. The use of TMT for components operating at 550-650°C. preserved their high ductility, raises their strength and stress-rupture properties and decreases their notch and thermal embrittlement sensitivity. (Kagan)

Kruglikov, S. S., Kudryavtsev, N. T., and Sobolev, R. P.
INVESTIGATION OF ELECTROLYTES FOR LEVELLING NICKEL-PLATING, PT. 1 (Issledovanie Elektrolitov dlya Vyravnivayushchego Nikelirovaniya, Soobshchenie 1). Aug 62 [16]p. (foreign text included) 4 refs. [DSIR] NLL M. 3954.
Order from OTS or SLA $1.60 63-19875

Trans. of Khim[iko]-Tekhnol[ogicheskii] Inst[itut] Moscow. Trudy (USSR) 1961, no. 32, p. 259-265.

DESCRIPTORS: Electrolytes, Surface properties, *Nickel plating, *Electrodeposition.

A method was proposed for the quantitative determination of the levelling power of electrolytes. A study was made of the effect of electrolysis conditions on the levelling power of nickel electrolytes containing coumarin additions. A nickel-plating procedure which insures good levelling of rough surfaces was developed. (Author)

Kudryavtsev, N. T., Kruglikov, S. S. and others.
INVESTIGATION OF THE LEVELLING ACTION OF SOME NITROGEN-CONTAINING HETEROCYCLIC COMPOUNDS. [1962] [11]p. (foreign text included) 12 refs. [DSIR] NLL M. 3953.
Order from OTS or SLA $1.60 63-19876

Trans. of #Zhur[nal] Prikl[adnoi] Khim[ii] (USSR) 1962, v. 35, no. 4, p. 777-781.

DESCRIPTORS: *Nickel plating, *Electrodeposition, Electrolytes, Additives, *Heterocyclic compounds, *Nitrogen compounds, *Quinolines, Methyl radicals, Iodides, *Flavins, Effectiveness, Brightness, Glucosides.

A study was made of the levelling power of some nitrogen-containing heterocyclic compounds: quinoline, methyl quinoline iodide, quinaldine and acriflavin; conditions of maximum levelling in electrolytes containing these compounds have been established. Of the additions studied, quinaldine may be of practical interest in levelling nickel platins. Both quinoline and its derivative, methyl quinoline iodide, have only a slight levelling effect and strongly affect the properties of deposits. Acriflavin produces levelling only in a very narrow range of concentration. Addition of a brightener (saccharin) reduces the levelling power of electrolyte containing quinoline or methyl quinoline iodide. (Author)

Roentgen, Paul and Giesen, Kurt.
INVESTIGATION OF THE ELECTROLYSIS OF COBALT. [1963] 29p. 37 refs.
Order from SLA $2.60 63-16853

Trans. from [Metall und Erz (Germany) 1942, v. 39, p. 7-13, 28-32].

DESCRIPTORS: *Cobalt, *Electrolysis, Electrolytes, Cobalt compounds, Chlorides, Sulfates, Manufacturing methods.

Lajos, Pilissy.
REFINING ACCUMULATOR-HARD-LEAD SCRAP WITH THE MIXTURE OF NATRIUM-POLYSULFID-CAUSTIC SODA. [1963] 8p. (figs. omitted).
Order from SLA $1.10 63-14166

Trans. of unidentified article from an unknown source, n.d.

DESCRIPTORS: *Batteries and components, Electrodes, *Lead, Wastes (Industrial), Purification, *Sodium compounds, Hydroxides, *Sulfides.

Smiryagin, A. P.
THE SURFACE TENSION OF MOLTEN METALS (INVESTIGATIONS ON NEW ALLOYS FOR POURING SHOT). [1963] 17p. (figs. omitted) 41 refs.
Order from OTS or SLA $1.60 63-16039

Trans. of Tsvetnye Metal[ly] (USSR) 1935 [v. 10] no. 8, p. 102-110.

DESCRIPTORS: *Liquid metals, *Surface tension, *Lead alloys, Alloys, Fused materials, Mathematical analysis.

Structural Metallurgy and Corrosion

Akol'zin, P. A., Zaitseva, Z. I. and others.
MEDIDAS PREVENTIVAS CONTRA LA CORROSION POR OXIGENO Y ANHIDRIDO CARBONICO DE UNA INSTALACION ENERGETICA MEDIANTE EL USO DE OCTADECILAMINA (Preduprezhdenie Kislorodnoi i Uglekislotnoi Korrozii Energeticheskogo Oborudovaniya s Pomoshch'yu Oktadetsilamina). (Utilisation of Octadecylamine as a Preventive of Oxygen and Carbon Dioxide Induced Corrosion in Power Plants). 6p.
CID: 62-241.
Order from OTS, ETC or CID $0.80 62-29241

Trans. in Spanish of Teploenergetika (USSR) 1958, v. 5, no. 10, p. 54-55.

DESCRIPTORS: *Amines, *Oxygen, *Carbon compounds, Oxides, *Power plants, Corrosion inhibition, Corrosive gases, Scale.

Nickel of 99.98% purity was obtained by the method of vacuum distillation. Compared with the nickel grades investigated earlier, distilled nickel was found to have higher ductility, a lower yield point and higher impact strength. (Azhazha, et al.) The object of the investigation was to establish the basic laws which govern the influence of other elements on the behaviour of dislocations and the character of the dislocation structure forming during plastic deformation. (Usikov and Utebskii)

Azhazha, V. M., Usikov, M. P. and others.
THE MECHANICAL PROPERTIES OF HIGH-PURITY NICKEL [AND] CHANGE IN THE DISLOCATION STRUCTURE OF NICKEL ON ALLOYING WITH TITANIUM, CHROMIUM AND ALUMINIUM (Mekhanicheskie Svoistva Nikelya Vysokoi Chisotoy [and] Izmenenie Dislokatsionnoi Struktury Nikelya pri Ego Legirovanii Titanom, Khromom i Alyuminiem). July 62 [24]p. (foreign text included) 18 refs. [DSIR] NLL M. 3942.
Order from OTS or SLA $2.60 63-19926

Trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Metallurgiya I Toplivo, 1962, no. 1, p. 160-162 and #Fizika Metallov i Metallovedenie (USSR) 1962, v. 13, no. 5, p. 701-709.

DESCRIPTORS: *Nickel, Mechanical properties, *Aluminum alloys, *Chromium alloys, *Titanium alloys, Crystal lattice defects, Microstructure.

Bäumel, A.
THE RELATIONSHIP BETWEEN THE HEAT TREATMENT AND THE CORROSION RESISTANCE OF STAINLESS STEELS CONTAINING APPROX. 17% CR IN BOILING CONCENTRATED NITRIC ACID. July 63.
Order from BISI £ 7 5s BISI-3287

Trans. of Archiv für das Eisenhüttenwesen (West Germany) 1963, v. 34 [no. 2] p. 135-146.

DESCRIPTORS: *Nitric acid, Boiling, *Chromium alloys, *Stainless steel, *Corrosion inhibition, Heat treatment.

Calvet, J. and Renon, C.
DISCONTINUOUS CRYSTAL GROWTH IN ALUMINUM-COPPER ALLOYS. [1963] [40]p. 22 refs.
Order from SLA $3.60 63-16641

Trans. of Rev[ue de] Métallurg[ie]. Mémoires Scientifiques (France) 1960, v. 57, no. 5, p. 345-362.

DESCRIPTORS: *Copper alloys, *Aluminum alloys, Crystal growth, Recrystallization.

In the complete absence of a foreign phase, discontinuous growth was never observed, but always continuous growth. On the contrary, the introduction and evolution of a foreign phase in a solid solution by precipitation followed by coalescence had been shown to be a very efficacious method, except for a few exceptions of making discontinuous growth appear and develop. At just a sufficient amount of precipitation at high temperature, a very great speed of the appearance and the development of gigantic crystals was very often associated; but in all the cases observed, without any exception, the existence of a clear period of nucleation was observed. In the Al-Cu alloys, an especially favourable case, it was established that the phenomenon was indifferent to the general conditions of orientation in the texture. It was also shown that the crystal at the beginning of growth could not continue to develop only by the existence of certain particular characteristics (size and shape of the boundaries) independently of the other conditions. The existence of the heterogeneous structures was explained. (Author)

Katz, W.
FORMATION AND HEAT TREATMENT OF ZINC LAYERS. 8p. 3 refs.
Order from SLA $1.10 63-16847

Trans. of German language article from unidentified source, n.d.

DESCRIPTORS: *Zinc coatings, *Protective treatments, *Corrosion inhibition, *Annealing, Corrosion, Metallography.

Tsukamato.
PROGRÈS RÉCENTS SUR LES REVÊTEMENTS INTERNES EN MATIÈRES PLASTIQUES CONTRE LA CORROSION (Recent Progress in the Corrosion Prevention by Internal Lining with Plastic Materials). 20p. 3 refs. FX-1099.
Order from OTS, ETC or CNRS $0.80 62-26464

Trans. in French of Ryusan (Japan) 1961, v. 14, p. 315-324.

DESCRIPTORS: Protective coverings, *Plastics, Insulating materials, *Corrosion inhibition.

NUCLEAR PHYSICS AND NUCLEAR CHEMISTRY

NUCLEAR SCIENCE AND TECHNOLOGY. 19 July 63, 15p. 29 refs. JPRS: 20271.
Order from OTS $0.50 63-31340

Trans. of Tehnika (Yugoslavia) 1963, v. 18, no. 5, p. 805-810, 819.

DESCRIPTORS: *Nuclear physics, *Nuclear engineering, *Yugoslavia, *Radioactive isotopes, *Radiation chemistry.

Contents:
Report on the work of the section of courses on isotopes, School for Isotopes, of the Institute for Nuclear Sciences "Boris Kidric" in Vinca (Belgrade) by O. M.
Radiation chemistry at the Institure for Nuclear Sciences "Boris Kidric" in Vinca (Belgrade) by Ivan Draganic.

Instruments and Installations

Hardt, Werner.
CONFIGURATION OF THE DESY MAGNET (Über die Gestalturg des DESY-Magneten). Mar 62 [69]p. (foreign text included).
Order from OTS or SLA $6.60 UCRL Trans-816

Trans. of Deutsches Elektronen-Synchrotron, Hamburg (West Germany). Rept-DESY-A1.5, 8 June 59, 29p.

DESCRIPTORS: *Magnets, Magnetic properties, Magnet coils, Design, Particle accelerator components, Synchrotrons.

Topics include: Calculation of the pole contour, (requirements for the pole contour, geometrical, interpretation of the calculation, mathematical description of the projection, consideration of the field conditions, selection of the available parameters and output of the results, effect of symmetrical deviations of the contour on the course of the field index (tolerances), effect of the finite permeability, effect of the coils, effect of the further yoke course, formulas and results, computation of the contour for a CG synchrotron); configuration of the end blocks (desired properties of the end blocks, strict fulfillment of the requirements for the plane case, deviations from the ideal

behavior); and the magnetic circuit (construction of the electrolytic tank at DESY, evaluation of the measurements in the tank, establishment of the "C" section).

Shvedov, V. P., Ankudinov, E. P. and others.
DÉTERMINATION DE FAIBLES ACTIVITÉS DES EAUX RADIO-POLLUÉES [Determination of Low Levels of the Radioactive Contamination of Water] tr. by Garber. 18 Apr 62 [15]p. 20 refs. CEA Trans. no. R 1657.
Order from OTS or SLA $1.60 63-15471

Trans. in French of #Radiokhimiya (USSR) 1962, v. 4, no. 1, p. 110-116.

DESCRIPTORS: *Water supplies, Lakes, Artificial radioactivity, *Radiological contamination, Determination, Chemical precipitation, *Evaporators, Automatic, *Electrolytic cells, Computers, *Gamma-ray spectroscopy, *Radiation measurement systems.

On a examiné brièvement les méthodes deprélèvement et de concentration des substances radioactives contenues dans l'eau. On a étudié sommairement une installation d'évaporation automatique d'eau. On a fait ressortir la possibilité de mesurer de faibles activités spécifiques à l'aide d'une installation de comptage à bruit de fond minimum. On a passé en revue quelques méthodes de détermination de la radio-pollution de bassins d'eau douce. (Author)

Nuclear Engineering and Power

SOVIET RESEARCH REACTORS VV-M(LENINGRAD AND VVR-M (KIEV): SUMMARY OF DATA. Rept. 7 on Work Assignment 31. 10 May 63 [18]p. 6 refs. AID Rept. P-63-60; AD-404 911.
Order from OTS or SLA $1.60 63-19584

DESCRIPTORS: *Nuclear reactors, *Research reactors, *Light water reactors, Design, Reactor fuel elements, Reactor cores, Reactor reflectors, Beryllium, Reactor shielding materials, Heat transfer, Reactor control, Reactor safety systems.

The report provides a description of two Soviet water-moderated, water-cooled reactors (VVR-M), one of which is located in Leningrad and the other in Kiyev. Background information, general construction details, features of the control and safety systems. heat transfer characteristics, reactor physics, and the experimental facilities afforded by the reactor are presented. The report is illustrated with cross-section views, photographs, and diagrams of the reactor and auxiliary equipment. (AID Note)

Fourbaix, M.
CORROSION OF NUCLEAR MATERIALS. Special rept. 3, 1 Mar 60-Dec 61. [1962] [88]p. CEBELCOR-744.
Order from OTS or SLA $8.10 EURAEC-293

Trans. of a rept. from Centre Belge d'Étude de la Corrosion, Brussels (Belgium) 18 Apr 62.

DESCRIPTORS: Corrosion, *Stainless steel, *Corrosion inhibition, Sodium compounds, Carbonates, Chlorides, Surface properties, Heat treatment, Oxidizers, Polarization.

An electrochemical investigation was conducted concerning the circumstances accompanying local corrosion and the conditions of noncorrosion of types 304, 316, and 410 stainless steel in the presence of 0.10 M sodium bicarbonate containing various amounts of sodium chloride at 20°C. The influence of surface conditions and thermal treatments is described. On the basis of break-through potential and protection potential criteria were deduced which made it possible to predetermine the circumstances under which oxidizing or reducing action causes local corrosion or protects the steels from corrosion. The validity of the predeterminations was checked by corrosimetric and corrosiscopic tests on the influence of oxidizing substances (hypochlorite, permanganate, hydrogen peroxide, oxygen) and the influence of anodic and cathodic polarization had on the behavior of the stainless steel in chlorinated bicarbonate solutions. Results are presented in tabulated and graphical form.

Foure, G.
IMPROVING HEAT TRANSFER IN BOILING WATER NUCLEAR REACTORS. Quarterly rept. 8 (1st quarter 1962). [1962] 15p.
Order from OTS or SLA $1.60 EURAEC-314

Trans. of a rept. from Société Nationale d'Étude et de Construction de Moteurs d'Aviation, Suresnes (France) Apr 62.

DESCRIPTORS: *Heat transfer, *Boiling water reactors, Hydrodynamics, Tests, Pressure, Nuclear reactors.

(See also EURAEC-231)

Kumpf, Hermann.
DEVICE FOR EXCHANGING FUEL ELEMENTS FOR NUCLEAR REACTORS WITH REACTOR VESSEL, tr. by J. R.-P. 26 Apr 63, 6p. (figs. omitted) 1 ref.
Order from OTS or SLA $1.10 63-19617

Trans. of German Auslegeschrift (DAS) 1,065,101, cl. 21g, 21/20, internat'l cl. G21, by Siemens -Schuckertewerke AG, appl. 9 Dec 58, announcement of application and laying open to public inspection 10 Sep 59.

DESCRIPTORS: *Reactor fuel elements, Handling, *Nuclear reactors, Reactor coolants, *Positioning devices (Machinery).

The invention involves a device for exchanging fuel elements of nuclear reactors with reactor vessel which are interiorly furnished with a loading machine with exchanging implement in the form of a retaining bell

with built-in telescoping device and in which the coolant is also used as transport medium for the fuel element during the exchanging operation, characterized in that the retaining bell and telescoping device (2 to 4) are separate insofar as operation and control are concerned, in that the retaining bell is connectable via a cutoff element to a low pressure tank and the telescoping device is selectively connectable via a multi-way cutoff element to either a low or high pressure tank depending upon the pressure prevailing in the reactor vessel. Instead of the low pressure tank, a suitable zone of the coolant circulation system having pressure lower than that in the reactor vessel can be used. (Author)

Povarnin, P. I. and Semenov, S. T.
AN INVESTIGATION OF BURNOUT DURING THE FLOW OF SUBCOOLED WATER THROUGH SMALL-DIAMETER TUBES AT HIGH PRESSURES. 1962 [18]p. 11 refs. FT-673.
Order from OTS or SLA $1.60 AEC-tr-5602

Trans. of Teploenergetika (USSR) 1960, v. 7, no. 1, p. 79-85.

DESCIRPTORS: *Reactor systems components, *Heat exchangers, Pipes, Water, Fluid flow, Boiling, *Reactor cores.

Over a wide range of variation of the velocity of flow of water and for subcooling of the core of the flow more than 20°C below saturation temperature for a given pressure, the quantity q_{cr} is given by an equation, which agrees well with the experimental data of the author and other investigators. The coefficients in the equation depend only on the pressure, and their values are to be found from the experimental curves. Furthermore, the value of the coefficient q_o can be found from a criterial equation, consisting of the same complexes as those in G. N. Kruzhilin's equation for determining q_{cr} in bulk boiling, but with a different coefficient and different exponents for the criteria. (Author)

Richter, H. and Tverberg, J. C.
INVESTIGATION OF ALLOYS OF ZIRCONIUM WITH NIOBIUM AND TIN IN VIEW OF THEIR UTILIZATION AS [SHEATHING] MATERIAL IN WATER-COOLED NUCLEAR REACTORS: ON THE TECHNOLOGICAL PROPERTIES AND THE RESISTANCE TO CORROSION OF THE ALLOY ZrNb3Sni. Special technical rept. 1 concerning proposal 139, on Contract 047-61-4 RDA. [1963] 56p. 16 refs.
Order from OTS or SLA $5.60 EURAEC-352

Trans. of a rept. from Metallgesellschaft A. G., Frankfurt a. M. (West Germany) 26 Apr 62.

DESCRIPTORS: *Light water reactors, *Zirconium alloys, *Niobium alloys, *Tin alloys, *Corrosion inhibition, *Reactor fuel cladding, Nuclear reactors, Heat treatment, Mechanical properties, Welding, Heat resistant metals and alloys, Water, Reactor coolants.

A thorough investigation was made of the ZrNb3Sni alloy which had proved promising in the course of a systematic investigation of zirconium alloys with niobium and tin contents. The resistance to corrosion in water and steam under high pressure is best when the alloy is allealed below 590°C, i.e. below the α/β transformation range. When annealing is performed at 580 ± 10°C, a good resistance to corrosion and satisfactory mechanical properties are ensured. Cold deformations up to 60% have but little effect on the resistance to corrosion. It is possible to harden the ZrnB3Sni alloy by quenching from 700 - 800°C and tempering at 350 - 450°C, but the hardened samples have a poor resistance to corrosion. During the corrosion process in water at 350°C and steam at 400°C, the ZrNb3Sni alloy absorbs less hydrogen than zircaloy-2; at 480°C, the absorption of hydrogen is about exactly the same as for zircaloy-2. The ZrNb3Sni alloy can be formed into seamless tubes and thin sheets. It can be welded under a protecting gas and in the electron beam, but the welded seams are more subject to corrosion than the nonwelded material. The elastic limit and strength of the welds are higher than corresponding values of the initial material. (Author)

Radioactivity

Ananyan, V. L.
BETA-RADIOACTIVITY OF THE SOILS OF ARMENIA (O Beta-Radioaktivnosti Pochv Armenii). 22 May 62 [7]p. 10 refs. NIH no. 5-47-62.
Order from OTS or SLA $1.10 62-25335

Trans. of Akad[emiya] Nauk Arm[yanskoi] SSR [Erevan]. Doklady, 1959, v. 28, no. 5, p. 217-221.

DESCRIPTORS: *Soils, *Beta particles, Radioactivity, Measurement.

The Beta-radioactivity of a soil was measured by a counter AS-2, placed in a special vessel 4.5 x 5.5 x 14.5 centimeters in size, in which was poured air-dry soil, passed through a one-millimeter screen. Results indicated a correlative dependence of beta-radioactivity with the potassium content in the soil. Measurements of beta-radioactivity of samples taken from the profile of a mountain indicated the following type distribution: on the summit (about 2,300 meters above sea level) the radioactivity amounted to 15.90×10^{-4} mu Cu per 100 grams of soil; on the middle slope in a zone of intense erosion-- 11.77×10^{-4}; at the foot, in a zone of aggradation, a considerable accumulation of radioactivity was observed, equal to 29.62×10^{-4} mu Cu. The method developed for the determination of total beta-radioactivity may be utilized in investigations of questions of natural radioactivity of soils.

Budde, Ernst and Wendt, Immo.
RADIOMETRIC SUPERVISION OF THE POTASSIUM CONTENT IN THE CRUDE SALT CURRENT. [1963] [8]p. 4 refs.
Order from SLA $1.10 63-16202

Trans. of Kali u[nd] Steinsalz (West Germany) 1950, v. 3, no. 3, p. 98-100.

DESCRIPTORS: *Potassium compounds, *Salts, Gamma rays, Gamma counters, *Radiation measurement systems, Chemical analysis, Radiochemistry, Rock salt, *Natural radioactivity.

PHYSICS

EXPLODING WIRES, FILMS, AND RIBBONS: ANNOTATED BIBLIOGRAPHY. Rept. on AID Work Assignment 34. 3 June 63 [12]p. 11 refs. AID Rept. B-63-78. AD-406 244
Order from OTS or SLA $1.60 63-23136

DESCRIPTORS: *Exploding wires, Metal films, *Abstracts, *Bibliographies, Spectroscopy, Electron optics, Plasma physics, Electric discharges.

The eleven entries are arranged alphabetically by author. An annotation is provided for each article.

Gorelik, L. O., Koval'skii, N. G. and others.
STUDY OF THE LOSS OF PLASMA THROUGH A MAGNETIC APERTURE OF TRAPS WITH A FIELD INCREASING TOWARD THE PERIPHERY, tr. by Helen J. Chick and John E. Osher. [1963] [12]p. 7 refs.
Order from OTS or SLA $1.60 AEC-tr-5620

Trans. from unidentified mono., Moscow, 1962.

DESCRIPTORS: *Plasma physics, Magnetic fields, *Magnetic pinch, Temperature.

Stoyanova, I. G. and Morozova, T. P.
AN INVESTIGATION OF INJURIES OCCURRING IN ELECTRON MICROSCOPE OBJECTS UNDER THE ACTION OF ELECTRONS. 12 July 63, 6p. 9 refs. JPRS: 20148.
Order from OTS $0.50 63-31269

Trans. of Akademiya Nauk SSSR. Doklady, 1963, v. 148, no. 4, p. 810-813.

DESCRIPTORS: *Electron microscopy, *Radiation injuries, Electrons, Organic compounds, Ethylenes, Crystal structure, Molecular structure, Gas ionization.

The magnitude of a radiation injury occurring during exposure of organic objects in a vacuum (2×10^{-4}mm) greatly exceeds that when objects are exposed in a gaseous atmosphere. Apparently the gas removes the electrostatic charge forming on the object during its exposure to electrons. The various magnitudes of radiation injuries for objects in various gases depend on gas pressures and on differences in cross sections of ionization of molecules of these gases. The magnitude of the object injury depends on the type of gas. The smallest injuries take place during exposures in an inert gas. Far greater injuries occur during exposures in air. This is due to the fact that radiation injuries caused by electrons passing through an object are aggravated by the active interaction of the gas with the object. There are conditions in operating an electron microscope when the factor of short-time exposure may be made use of, in order to limit injuries occurring in an object under the action of electrons. (Author)

Troitskii, V. S.
CONCERNING THE THEORY OF MEASURING WEAK SIGNALS HAVING A CONTINUOUS SPECTRUM (K Teorii Izmereniya Slavykh Signalov Imeyushchikh Sploshnoi Spektr). [1963] [25]p. 6 refs.
Order from OTS or SLA $2.60 63-14426

Trans. of Zhurnal Tekhnicheskoi Fiziki (USSR) 1951, v. 21, no. 8, p. 994-1003.

DESCRIPTORS: *Signal-to-noise ratio, Continuous spectrum, *Radio interference, Frequency modulation, *Measuring devices (Electrical and Electronic), Measurement, Design.

There is a far reaching analogy between the compensating and modulating method of measuring the intensity of the continuous spectrum. At the stable level of natural noises of the receiving apparatus, both methods give the sensitivity gain, proportional to the relation $\sqrt{\frac{\Delta f}{\Delta F}}$, and the constants of proportionality are of the same order. The sensitivity of both systems can be raised to any degree desired by selecting a sufficiently narrow filter band. However, the level of the noises in a real amplifier is unstable, since what takes place is its gradual (slow) irregular modulation. This instability diminishes the sensitivity gain in the compensating method, but where the modulation frequency is sufficiently high for the signal which is being measured (in practice, several dozen Hertz) it does not have any effect at all on the sensitivity of the modulating method. Thus the greater advantage of the modulating method as compared with the compensating method reduces itself to the elimination of slow chaotic modulation of the level of the natural noises, as a factor. (Author)

Electricity and Magnetism

Bittner, H. and Goretzki, H.
MAGNETIC STUDIES ON THE CARBIDES TiC, ZrC, HfC, VC, NbC AND TaC. [1963] 6p. 6 refs.
Order from SLA $1.10 63-14451

Trans. of Monatshefte für Chemie (Austria) 1962, v. 93, no. 5, p. 1000-1004.

DESCRIPTORS: *Paramagnetic crystals, *Titanium compounds, *Zirconium compounds, *Hafnium compounds, *Vanadium compounds, *Niobium compounds, *Tantalum compounds, *Carbides, Magnetic properties, *Magnetic susceptibility, Chemical bonds, Crystal lattices.

The magnetic susceptibility of very pure monocarbide samples is measured in dependence of their carbon deficiency. TiC_{1-x}, ZrC_{1-x}, HfC_{1-x} and VC_{1-x} become more paramagnetic as carbon deficiency increases. Extrapolation to the stoichiometric composition TiC leads to diamagnetism. NbC_{1-x} and TaC_{1-x} show a different trend. Their susceptibilities decrease generally with increasing C-deficiency and reach diamagnetic values. A concept for interpreting the susceptibility pattern of TiC_{1-x}, ZrC_{1-x}, HfC_{1-x}, and VC_{1-x} is developed, taking into account bond energies in transition metals. Magnetic behavior of mixed carbides is explained. (Author)

Kobelev, V. V. and Korsunskii, A. A.
THE DOMAIN STRUCTURE OF UNIAXIAL FERROMAGNETIC FILMS, tr. by E. G. Peters. [1963] [15]p. (figs. omitted) 8 refs. [DSIR] NLL M. 3563.
Order from OTS or SLA $1.60 62-24696

Trans. of mono. Domennaya Struktura Odnoosnykh Ferromagnitnykh Plenok, Akad. Nauk SSSR, 1961. Another trans. is available from OTS or SLA $2.60 as 62-15437, JPRS-11981, 17 Jan 62 [30]p.

DESCRIPTORS: *Ferromagnetic materials, *Films, Preparation, Surface properties, Magnetic properties, Magnetic moments, Hysteresis, Photographic analysis, Optics, Magnetic effects, Kerr effect.

For abstract see Technical Translations 7: 944, 1962.

Kuznetsov, P. I.
CALCULATION OF TRANSIENT PROCESSES IN LONG LINES BY MEANS OF BESSEL FUNCTIONS OF TWO INDEPENDENT VARIABLES (Raschet Perekhodnykh Protsessov v Dlennykh Liniyakh pri Pomoshchi Tsilindricheskikh Funktsii ot Dvukh Nezavisimykh Peremennykh) tr. by Zanis Stuberovskis. Aug 62 [17]p. 14 refs. E-T-R-R-62-50; AD-298 108.
Order from OTS or SLA $1.60 63-15787

Trans. of Elektrichestvo (USSR) 1953, no. 5, p. 35-40.

DESCRIPTORS: *Transients, Bessel functions, Integrals, Cylindrical bodies, Waveguides, Analysis, Real variables, Propagation.

It is shown that transient processes in long lines are expressed in their final form by means of cylindrical functions of two independent variables. (Author)

Nikitina, T. N.
INVESTIGATION OF THIN PERMALLOY FILMS IN WEAK MAGNETIZING FIELDS. [1963] 7p. 4 refs.
Order from OTS or SLA $1.10 63-14445

Trans. of Moscow U. Vest[nik] Ser[iya 3]: Fiz[ika] Astronom[iya] (USSR) 1962 [v. 17] no. 6, p. 59-62.

DESCRIPTORS: *Metal films, Iron alloys, Nickel alloys, *Magnetism, *Magnetic fields, Magnetic properties, Measurement, *Ferromagnetic materials, Films, Magneto-optic effect.

In fields less than the coercive force, a change in film magnetization is observed which occurs over very short time intervals. The signal amplitude produced by these processes is small. The change in magnetization occurs due to small displacements in the range of embryo areas of the new phase and are independent of film thickness. The region where film remagnetization occurs by displacement of domain boundaries depends on film thickness. The less that film thickness is, the lower is the remagnetizing field H_p necessary to start remagnetization and the larger is the remagnetizing field H_p necessary to produce transition to rotational processes. Reversible magnetization change processes were observed in all remagnetizing fields. Amplitude and duration of the signal of reversible processes did not change with increase of the remagnetizing field. (Author)

Semenova, O. P. and Petrova, M. V.
CONTRIBUTION TO THE PROBLEM OF THE EFFECT OF THE ATMOSPHERE ON THE RADIATION OF AN ARC DISCHARGE, PT. 2. 11 Mar 63 [16]p. 12 refs. FTD-TT-63-19. AD-401 594
Order from OTS or SLA $1.60 63-19194

Unedited rough draft trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Fizika (USSR) 1962, no. 1, p. 111-117.

DESCRIPTORS: *Electric discharges, Electrodes, Carbon, Metals, Argon, Air, Nitrogen, Dissociation, *Spectrographic analysis, Controlled atmospheres.

It is shown that the change from an atmosphere of air to one of nitrogen, and more so for argon, is equivalent to transition to a discharge at a lower pressure. Substitution of atmosphere in a low-current arc discharge is reflected in the radiation of the discharge through a change in the entrance of vapors of the electrodes into the discharge, effective sections of scattering of electrons by the arc gas, and effect of the processes of dissociation (discharge between carbon electrodes in an atmosphere of nitrogen). (Author)

Sokolov, A. V.
GENERAL PHENOMENOLOGICAL THEORY OF MAGNETO-OPTICAL PHENOMENA IN FERROMAGNETS. [1963] 11p. 15 refs.
Order from OTS or SLA $1.60 63-14447

Trans. of Fizika Metallov i Metallovedenie (USSR) 1956, v. 3, no. 2, p. 208-215.

DESCRIPTORS: *Ferromagnetic materials, Magnets, *Magneto-optic effect, Dielectric properties, Electromagnetic fields, Differential equations, Theory.

Turov, E. A.
PECULIARITIES OF FERROMAGNETIC RESONANCE IN METALS: INFLUENCE OF CONDUCTION ELECTRONS ON FERROMAGNETIC RESONANCE. [1963] 26p. 31 refs.
Order from OTS or SLA $2.60 63-14468

Trans. of mono. Ferromagnitnyi Rezonans: [Yavlenie Rezonansnogo Poglosheniya Vysokochastotnogo Elektromagnitnogo Polya v Ferromagnitnykh Veshchestvakh (Ferromagnetic Resonance: The Phenomenon of Resonance Absorption of a High-Frequency Electromagnetic Field in Ferromagnetic Substances)] ed. by S. V. Vonsovskii, Moscow, 1961, p. 188-214.

DESCRIPTORS: *Metals, *Ferromagnetism, Ferromagnetic materials, *Resonance absorption, High frequency, Electromagnetic fields, Electrons, Mathematical analysis.

Vautier, Roger.
THE ENERGY OF MAGNETIZATION. July 61, 14p. (figs. omitted) 2 refs.
Order from OTS or SLA $1.60 62-24056

Trans. of C[entre] N[ational de la] R[echerche] S[cientifique, Paris]. J[ournal des] Rech[erches] (France) 1957 [v. 8] no. 38, p. 23-29.

DESCRIPTORS: *Magnetic fields, Energy, Analysis, Magnets, Circuits, Inductance.

The author analyzes the origin of the magnetic energy localized in the air gap of a magnetic circuit involving a permanent magnet. He examines the different possible cases and shows that the current interpretations of the value of this energy are wrong. (Author)

Electronics

Braude, G. V. and Isaeva, I. N.
NONLINEAR APERTURE CORRECTION. 12 Feb 63 [16]p. 6 refs. FTD-TT-62-1726. AD-401 595.
Order from OTS or SLA $1.60 63-19165

Unedited rough draft trans. of Tekhnika Kino i Televideniya (USSR) 1961 [v. 5] no. 12, p. 3-10.

DESCRIPTORS: *Video signals, Distortion, *Corrections, Frequency, Television, Interference analyzers.

Discussed is a method of aperture correction, which can be called a method of nonlinear aperture correction, equivalent in its action to the distribution of the signal into several levels with corresponding to each level, lying near the lever of the black, incident frequency characteristic with its equivalent frequency band, and to each one of the levels, lying near the level of white, frequency characterisitic, having an ascend with its degree of aperture correction (Author)

Desjonquères, J. and Gellet, R.
A HYDROGEN ION SOURCE, PULSED AT VERY LOW FREQUENCY BY MEANS OF A TITANIUM FILAMENT. [1963] [6]p. 6 refs.
Order from SLA $1.10 63-16541

Trans. of le Vide; [Technique, Applications] (France) 1957 [v. 12] no. 68, p. 162-166.
Another trans. is available from SLA as 58-745.

DESCRIPTORS: *Protons, Hydrogen, *Ion sources, Ionic current, *Titanium, *Filaments, Gas ionization, Very low frequency.

The pulsed titanium filament source works for an average of about 50 hrs. without dismantling. The limitation is never due to exhaustion of the hydrogen charge (during the hours it is not working, one can introduce into the filament compartment gas to be reabsorbed) but always to the breaking of the filament. This type of source is especially interesting in cases where an appreciable pulsed ion current is required and where the limitation is imposed by the pumping system. The titanium filament source is only applicable when the pulsation is of very low frequency, because of the thermal inertia of the system. (Author)

Druyvesteyn, M. J.
REMARKS CONCERNING TWO EARLIER PAPERS OF ELECTRON DIFFUSION. [1963] 4p. 5 refs.
Order from SLA $1.10 63-14459

Trans. of Physica (Netherlands) 1934, v. 1, p. 1003-1006.

DESCRIPTORS: *Gas discharges, *Glow discharges, Theory, Equations, Corrections, Electrons, Diffusion, *Discharge tubes, Low pressure research, *Helium group gases, *Plasma physics.

Klimontovich, Yu. L., Boreskov, G. K. and others.
A KINETIC DESCRIPTION OF QUASI-EQUILIBRIUM TURBULENT PROCESSES IN A PLASMA [AND] THE CATALYTIC PROPERTIES OF CHELATE POLYMERS. 5 Mar 63 [19]p. 19 refs. FTD-TT-62-1795; AD-299 852.
Order from OTS or SLA $1.60 63-19963

Unedited rough draft trans. of Akademiya Nauk SSSR. Doklady, 1962, v. 144, no. 5, p. 1022-1025, 1069-1072

DESCRIPTORS: *Plasma physics, *Polymers, Kinetic theory, Stabilization systems, Turbulence, Chelate compounds, Catalysts, Catalysis.

Kotov, Ya. P., Umarov, G. Ya., and Faizullaev, D. F.
STATIONARY FLOW OF A CONDUCTING MEDIUM IN THE PRESENCE OF A MAGNETIC FIELD. 29 Mar 63 [10]p. 3 refs. FTD-TT-63-205.
Order from OTS or SLA $1.10 63-19339

Unedited rough draft trans. of Akademiya Nauk Uz[bekskoi] SSR [Tashkent]. Izvestiya. Seriya Fiziko-Matematicheskikh Nauk, 1962, no. 3, p. 75-80.

DESCRIPTORS: *Magnetohydrodynamics, *Fluid flow, *Magnetic fields, Partial differential equations, Equations of motion.

Consideration is given to the problem of the motion of a two-phase medium where one of the phases is a conductor. A mixture of this type is described by a system of hydrodynamic equations for the motion of monophase media for which an additional term of the electromagnetic derivation is included in the equation of motion for the conducting medium and in which the system is completed with the Maxwell equations. Study of such a system makes it possible to examine, for example, how the nonconducting fluid influences the motion of the conducting one.

Pichakhci, L. D.
ON THE CONSTANCY OF TANGENTIAL RUPTURE IN A RAREFIED PLASMA. 28 May 63 [9]p. 7 refs. FTD-TT-63-182.
Order from OTS or SLA $1.10 63-23193

Unedited rough draft trans. of Ukrayins'kyi Fizychnyi Zhurnal (USSR) 1961, v. 6, no. 1, p. 86-92.

DESCRIPTORS: *Plasma physics, *Magnethohydrodynamics, Rupture, Excitation, Stability, Equations, Numerical analysis.

Pupp, W.
OSCILLOGRAPH PROBE MEASUREMENTS ON MOVING LAYERS IN THE POSITIVE COLUMN OF RARE GASES. [1963] 12p. 3 refs.
Order from SLA $1.60 63-14458

Trans. of Physik[alische] Zeitsch[rift] (Germany) 1935, v. 36, p. 61-66.

DESCRIPTORS: *Plasma physics, *Gas discharges, *Glow discharges, Electric fields, Measurement, Oscillographs, *Probes (Electromagnetic), Design, *Discharge tubes, Low pressure research, *Helium group gases, Argon.

Turbovich, I. T.
CERTAIN GENERALIZATION OF THE KOTEL'NIKOV THEOREM. [1961] 12p. 1 ref. MDF T 121.
Order from OTS or SLA $1.60 62-15909

Trans. of Radiotekhnika (USSR) 1956, v. 11, no. 4, p. 5-14.

DESCRIPTORS: *Time, *Functions, Frequency, Radiofrequency spectroscopy, Series.

An expansion is given of the time function which has an unlimited frequency spectrum, in a form analogous to the Kotel'nikov expansion. The error is determined in the approximate expansion of the time function with the unlimited spectrum into a Kotel'nikov series. (Author)

Molecular Physics and Spectroscopy

Akimov, E. M.
NEW LOW VOLTAGE SOURCES OF VACUUM ULTRA VIOLET. 15 Mar 63 [16]p. 41 refs. FTD-TT-62-1913.
Order from OTS or SLA $1.60 63-19491

Unedited rough draft trans. of Moscow U. Vestnik. Seriya Matematiki, Mekhaniki, Astronomii, Fiziki, Khimii (USSR) 1958 [v. 13] no. 4, p. 109-118.

DESCRIPTORS: *Ultraviolet radiation, Electromagnetic waves, Sources, *Ultraviolet spectroscopy, *Vacuum apparatus, *Electric arcs, Sparks, Electric discharges, Discharge tubes.

Stable vacuum arc can be obtained at relatively low currents (5-7 amp) between carbon and graphite cathode and anode made of any given high melting metal by smoothly separating the electrodes. Stable vacuum arc at currents of 5-7 amp between the carbon cathode and metallic anode can be obtained by rapidly separating the electrodes to a distance of 3-5 mm, provided on the DC current is applied a high frequency high voltage. A new source has come to realization: contact spark - low voltage spark between two weakly contacted electrodes, one of which is a carbon one, originating during the discharge of a high capacitance capacitor. Contact spart can work in the air and in high vacuum as well. In it is developed a temperature, sufficient to excite spectra of repeatedly ionized atoms. By combining breaking vacuum arc with capacitor discharge was brought into realization a source of vacuum ultraviolet, having intensive evaporation of electrode material and high temperature - breaking condensed arc. (Author)

Farsky, Roman.
SPECIAL ATMOSPHERES IN SPECTRUM ANALYSIS. [1963] 15p. 19 refs.
Order from SLA $1.60 63-14467

Trans. of Hutnicke Listy (Czechoslovakia) 1960, v. 15, p. 548-552.

DESCRIPTORS: Spectroscopy, Gases, *Air, *Argon, *Nitrogen, Electrodes, Chemical reactions, Pressure, Thermal conductivity, Impurities, *Aluminum, *Zinc, *Magnesium, Analysis, *Gas discharges, *Controlled atmospheres.

Goubeau, J.
THE SIGNIFICANCE OF THE FORCE CONSTANTS FOR THE CHEMIST. [1963] 14p. (table omitted) 21 refs.
Order from SLA $1.60 63-16222

Trans. of Angewandte Chemie (West Germany) 1961, v. 73, no. 10, p. 305-309.

DESCRIPTORS: Molecular structure, *Chemical bonds, Carbon, Hydrogen, Nitrogen, Oxygen, Vibration, *Infrared spectroscopy, *Raman spectroscopy, *Boron compounds, Fluorides, *Isocyanates, Methyl radicals.

Ksandopulo, G. I., and Shcherbov, D. P.
DOSAGE DU STRONTIUM DANS LES SILICATES ET LES CARBONATES PAR PHOTOMÈTRE À FLAMME AVEC FILTRE DE LUMIÈRE, À LIQUIDE (Flame Photometric Determination of Strontium in Silicates and Carbonates Using Liquid Light Filters). 8p. 11 refs.
Order from OTS, ETC or CNRS $0.80 62-26968

Trans. in French of #Zavodskaya Laboratoriya (USSR) 1958 [v. 24] no. 12, p. 1432-1434.

DESCRIPTORS: *Strontium, *Spectrophotometers, Flames, *Silicates.

Levintov, I. I.
THE IMPULSE SOURCE OF LIGHT AND ITS APPLICATION TO THE SPECTRUM ANALYSIS OF NON-METALS IN SOLIDS. [1963] 3p. (figs. omitted).
Order from OTS or SLA $1.10 63-14095

Trans. of [Akademiya Nauk SSSR. Izvestiya. Seriya Fizicheskaya, 1945, v. 9, p. 699-702.

DESCRIPTORS: *Quantitative analysis, Catalysts, Impurities, Non-metals, *Metalloids, *Spectrum analyzers, Light pulses, *Electric arcs, Powders, Spectroscopy, Solids.

Mandelstam, S. L.
THE INTENSITY OF SPECTRAL LINES IN AN ARC BETWEEN CARBON ELECTRODES, tr. by Heinrich Beckert. 6 Mar 63 [12]p. 13 refs. RSIC-6
Order from OTS or SLA $1.60 63-19560

Trans. of Akademiya Nauk SSSR. [Comptes Rendus (Doklady) de l'Academie des Sciences de l'U. R. S. S.] 1938, v. 18, p. 559-563.

DESCRIPTORS: *Electric arcs, *Line spectrum, Intensity, *Electrodes, Carbon, *Gas ionization.

Scheinker, Yu. N., Peresleni, E. M., and Braz, G. I.
THE VIBRATIONAL SPECTRA OF ETHYLENIMINE AND ITS ALKYL SUBSTITUTES, by. by Ingeborg V. Baker. 15 Mar 63 [12]p. 8 refs. RSIC-5.
Order from OTS or SLA $1.60 63-15912

Trans. of Zhurnal Fizicheskoi Khimii (USSR) 1955, v. 29 [no. 3] p. 518-522.

DESCRIPTORS: *Ethylene derivatives, *Iminęs, Methyl radicals, Propyl radicals, Butyl radicals, Cyclohexanes, Chemical bonds, Vibration, *Raman spectroscopy, *Infrared spectroscopy, Absorption spectrum.

Results are given of studies on the spectra of Raman effect and infrared absorption, as well as of basicity constants for ethylenimine, 2-methylethylenimine, 2.2-dimethylethylenimine, N-isopropylethylenimine, N-2-butylethylenimine, and N-cyclohexylethylenimine.

Optics

Batsanov, S. S., Grigor'eva, G. N., and Sokolova, N. P.
OPTICAL PROPERTIES OF RARE EARTH METAL OXIDES (Opticheskie Svoistva Okislov Redkozemel'nykh Metallov). [1962] [6]p. 8 refs.
Order from OTS or SLA $1.10 63-13022

Trans. of Zhurnal Strukturnoi Khimii (USSR) 1962, v. 3, no. 3, p. 339-342.

DESCRIPTORS: *Rare earths, Powders, Crystals, Films, Optical properties, Refractive index, Density, Spectra (Infrared), Measurement.

The refraction indices and densities of 15 rare-earth oxides were measured, and their infrared spectra were plotted.

Connes, P.
THE SPHERICAL FABRY-PEROT ETALON. [1963] 22p.
Order from SLA $2.60 63-14013

Trans. of Journal de Physique et le Radium (France) 1958, v. 19, no. 3, p. 262-269.

DESCRIPTORS: *Interferometers, Design, Line spectrum, Hyperfine structure, Optical instruments.

Timofeeva, V. A.
DEPENDENCE OF DIRECTIONAL DISTRIBUTION OF LUMINANCE UPON THE RATIO OF COEFFICIENTS OF ABSORPTION AND SCATTERING. [1963] 7p. 1 ref.
Order from OTS or SLA $1.10 63-16636

Trans. of Akademiya Nauk SSSR. Doklady, 1957, v. 113, no. 3, p. 556-559.
Another trans. is available from LC or SLA mi$1.80, ph$1.80 as 59-20209 [1959] [7]p.

DESCRIPTORS: *Light, Absorption, Scattering, Optics.

Solid State Physics

Averbukh, R.E. and Kosman, M. S.
CONCERNING THE DIELECTRIC PROPERTIES OF BARIUM TITANATE [O Dielektricheskikh Svoistvakh Titanata Bariya]. [1963] 6p. (figs. omitted) 2 refs.
Order from OTS or SLA $1.10 63-14433

Trans. of [Zhurnal Eksperimental'noi i Teoreticheskoi Fiziki] (USSR) 1949, v. 19, no. 11, p. 965-970.
Other translations are available from SLA as R-715, 12p. and RT-478, 5p.

DESCRIPTORS: *Barium compounds, *Titanates, *Dielectric properties, *Ferroelectric materials, Dielectrics, Temperature.

Bansho, Yoshie; Suzuki, Shigeru and others.
RELATIONSHIP OF STRUCTURE TO CRYSTALLINE TRANSFORMATION GROWTH IN MIXED PHTHALOCYANINE PIGMENTS. PT. 3 of Phthalocyanine Organic Pigment Study. [1963] 10p. 2 refs.
Order from SLA $1.10 63-16644

Trans. of Kogyo Kagaku Zasshi (Japan) 1962, v. 65, no. 12, p. 2005-2009.

DESCRIPTORS: *Phthalocyanines, *Pigments, *Copper compounds, *Crystallization, *Transformations, Crystal structure, Cobalt compounds, Iron compounds, Titanium compounds, Chlorides.

Crystals of metastable copper phthalocyanine undergo crystalline transformation in an aromatic solvent and grow into stable elongated needle crystals. In order to improve this property, mixed pigments were prepared by mixing iron, titanium-, metal-free cobalt phthalocyanines and chlorine-substituted copper phthalocyanine with metastable copper phthalocyanine, and experimented on their crystalline transformation growth. The method of adding two types of phthalocyanines of different metals to copper phthalocyanine was used for preparing mixed pigments. The crystalline transformation growth of the pigments was examined from the microscopic photographs of the samples boiled in xylene. The results of the experiments were that metal-free-, nickel-, cobalt phthalocyanines did not show any effect of checking the crystalline transformation growth. But, titanium- and iron phthalocyanines showed a large checking effect. A mixed pigment, with copper phthalocyanine: titanium phthalocyanine: iron phthalocyanine = 85:10:5, had no crystalline transformation growth. As a mixing ingredient, chlorine-substituted copper phthalocyanine had little effect. Blue pigments of different types (for example, Slane (phonetic) blue RSN, indigo pure) showed no effect at all. (Author)

Cabane, Gerard and others.
CONTRIBUTION TO THE STUDY OF THE BRITTLENESS OF THE Fe-Al SOLID SOLUTION. [1963] [4]p. 2 refs.
Order from SLA $1.10 63-18092

Trans. of Academie des Sciences [Paris]. Comptes Rendus (France) 1962, v. 254, p. 3360-3362 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: Solutions, Solids, *Aluminum alloys, *Iron alloys, Brittleness.

The principal obstacle to the development of iron alloys containing high Al contents is an integranular brittleness which especially appears when some impurities are precipitated in the boundaries or when the deformation at high temperature is very rapid. One avoids intergranular fracture by using metals of sufficient purity and regulating the foundry conditions in order to produce fine and equiaxed grains, and finally, avoiding all deformation by impact. With these precautions one can prepare alloys with 40 atomic % Al in the form of rolled strip with good ambiant mechanical properties. (Author)

Devyatkova, E. D. and Stil'bans, L. S.
INVESTIGATIONS OF THE INFLUENCE OF ATOMIC ADMIXTURES ON THE THERMAL CONDUCTIVITY IN A CRYSTALLINE LATTICE (Issledovanie Vliyaniya Atomnykh Primesei na Teploprovodnost' Kristallicheskoi Reshetki) tr. by Marcel I. Weinreich. 11 Mar 63 [8]p. 5 refs.
Order from OTS or SLA $1.10 SCL-T-468

Partial trans. (excerpts) of Zhurnal Tekhnicheskoi Fiziki (USSR) 1952, v. 22 [no. 6] p. 968-972. Another trans. is available from OTS or SLA $1.60 as 62-16110 [1962] [15]p.

DESCRIPTORS: *Single crystals, *Lattices, Potassium compounds, Impurities, Colors, *Thermal conductivity.

For abstract see Technical Translations 9: 105, 1963.

Glinchuk, K. D., Litovchenko, N. M., and Miseluk, O. G.
INVESTIGATION OF THE RECOMBINATION OF CHARGE CARRIERS IN GERMANIUM DOPED WITH CERTAIN IMPURITIES. III. GERMANIUM DOPED WITH Ag AND Au. [1963] 21p. 30 refs.
Order from OTS or SLA $2.60 63-14466

Trans. of Ukrayin[s'kyi] Fiz[ychnyi] Zh[urnal] (USSR) 1962, v. 7, no. 2, p. 152-166.

DESCRIPTORS: *Germanium, *Impurities, *Silver, *Gold, *Semiconductors, Temperature, *Recombination reactions, Electrons, Atomic energy levels, Iron, Cobalt, Nickel, Reliability.

Investigations were carried out to determine dependence of the life time of minority charge carriers τ in n and p type germanium on temperature and concentration when doped with Ag and Au impurities. Charge is determined for the impurity centers of these elements which play a major role in the processes of recombination. Also determined are the trapping cross-sections of electrons and holes by atoms of these elements. Comparison was made of recombination properties of multicharged impurities Fe, Co, Ni, Ag and Au in germanium. (Author)

Ivanov, A. P.
INTENSITY OF LUMINESCENCE OF LUMINOPHOR POWDERS. [1963] 11p. 7 refs.
Order from OTS or SLA $1.60 63-14475

Trans. of Zhurnal Eksperimental'noi i Teoreticheskoi Fiziki (USSR) 1954, v. 26, no. 3, p. 275-280.

DESCRIPTORS: *Luminescence, *Powders, Thickness, Scattering, Light, Absorption, Binders, Excitation, Mathematical analysis.

The dependence of luminescence intensity of luminophor powders upon dispersion of the binder and the thickness of luminescent layer has been studied theoretically. On the basis of an assumption that the absorption, scattering and emission are continuous functions of the thickness of layer, equations have been received for the intensity of luminescence of layer from the excited and the opposite sides. Analysis of formulas obtained and data on optimum thickness of luminescent layers are included. (Author)

Karavaev, G. F., Kudryavtseva, N. V., and Chaldyshev, V. A.
STRUCTURE OF ENERGY SPECTRUM OF ELECTRONS IN A Th_3P_4 CRYSTAL. [1963] 17p. 7 refs.
Order from OTS or SLA $1.60 63-14450

Trans. of #Fizika Tverdogo Tela (USSR) 1962, v. 4, no. 12, p. 3471-3481.

DESCRIPTORS: *Semiconductors, *Thorium compounds, *Phosphides, *Selenides, *Crystal lattices, *Electrons, Energy, Distribution, *Brillouin zones, Quantum statistics, Groups (Mathematics), Matrix algebra.

Topological structure of the energy spectrum of electrons in Th_3P_4 crystals was investigated by weighted corepresentation. Dispersion laws near symmetry points of the Brillouin zone were obtained. (Author)

Khlebnikov, N.
PHOTOCATHODES COMPLEXES (Complex Photocathodes). 8p.
Order from OTS, ETC or CNRS $0.80 62-28094

Trans. in French of Akademiya Nauk. SSSR. Izvestiya. Seriya Fizicheskaya, 1944, v. 8, no. 5, p. 286-289.

DESCRIPTORS: *Photoemission, *Cathodes, Antimony alloys, Cesium alloys, Semiconductors, Secondary emission, Oxygen, Silver alloys, Theory.

Lashko, N. F.
NICKEL-SILICON PHASE DIAGRAM. Mar 58 [6]p. 4 refs. GKN Trans-643; BISI Trans. no. 870; [DSIR] NLL M.4109.
Order from OTS or SLA $1.10 62-24116

Trans. of Akademiya Nauk SSSR. Doklady, 1951, v. 81, no. 4, p. 605-607 and 613.

DESCRIPTORS: *Nickel alloys, *Silicon alloys, *Phase studies.

The author claims to have proven the existence of Ni_3Si in the phase system of nickel-silicon alloys. On a micrograph of an alloy with 7% silicon, dendrites of non-homogeneous solid solution can be seen, with white, weakly etching material between their arms. The central parts of the dendrite arms are white; the peripheries of the dendrites are covered with fine precipitations of a second phase. In this micrograph, the sequence of crystallization of the alloy can be clearly seen. The second phase in the 7% silicon alloy is the intermetallic compound Ni_3Si with a Cu_3Au type superlattice. This superlattice is stable right up to the melting point of the alloy. The compound remains practically unchanged in properties right up to 1150°C., as can be seen from the constance of its lattice parameter and hardness. The microhardness of the compound and of the solid solution were determined on the Khrushchov apparatus. Its hardness remains practically independent of the heating temperature. The hardness of the solid solution is about 220 Brinell units, that of the intermetallic compound about 400 units. Thus it is established that in the nickel-silicon alloys, there is an ordered chemical compound with a face-centered superlattice. The ordering does not dissapear right up to the fusion temperature, so that this phase must form in the liquid state.

Ovcharenko, O. M.
TO DETERMINE THE ENERGY OF FORMATION OF VACANCIES IN SILVER. 28 Feb 63 [6]p. 11 refs. FTD-TT-63-124; AD-400 505.
Order from OTS or SLA $1.10 63-19680

Unedited rough draft trans. of Ukrayins'kyi Fizychnyi Zhurnal (USSR) 1961, v. 6, no. 1, p. 139-140.

DESCRIPTORS: *Silver, *Crystal lattice defects, Heat of formation, Heat of activation, Quenching (Cooling), Resistance (Electrical), Diffusion.

The method of hardening (quenching) vacancies and measuring the increment in electro-resistivity was used to obtain data on the energy of formation and energy of activation in dislocation of vacancies (Q_1 and Q_2) in silver.

Samsonov, G. V. and Koval'chenko, M. S.
SOME FEATURES OF THE SINTERING OF POWDERS OF REFRACTORY COMPOUNDS [Nekotorye Zakonomernosti Spekaniya Poroshkov Tugoplavkikh Soedinenii]. [1963] 12p. 19 refs.
Order from OTS or SLA $1.60 AEC-tr-5604

Trans. of Poroshkovaya Metallurgiya (USSR) 1961, v. 1, no. 1, p. 20-29.
Another trans. is available from OTS or SLA $1.60 as 62-32494, RTS-2119, Aug 62 [17]p.

DESCRIPTORS: *Powders, *Sintering, *Refractory materials, Density, Elasticity, Creep, Grains (Metallurgy), Particles, Deformation, Relaxation time, *Powder metallurgy, Vacuum furnaces, Surface tension, Thermodynamics, Phase transitions.

For abstract see Technical Translations 8: 1261, 1962.

Tolpygo, K. B., Tsvirko, Yu. A., and Shatalov, A. A.
KINETICS OF THE PHOTOCHEMICAL TRANSFORMATION REACTION OF F-CENTERS INTO F_2-CENTERS IN ALKALI-HALOID CRYSTALS (Kinetika Fotokhimicheskoi Reaktsii Prevrashcheniya F-Tsentrov v F_2-Tsentry v Shchelochno-Galoidnykh Kristallakh) tr. by Lydia Venters. Nov 62, 12p. 10 refs.
Order from OTS or SLA $1.60 AEC-tr-5541

Trans. of mono Fizika Tverd[ogo] Tel[a]: Sbornik Statei [Solid State Physics: Collection of Articles] v. 1 [Moscow] 1959, p. 170.

DESCRIPTORS: *Photochemistry, *Alkali metal compounds, *Halides, Crystals, *Color centers, Transformations, Ionization, Quantum mechanics, Equations.

Theoretical investigation of the transformation process of F-centers into F_2-centers under the effect of light was investigated. It was assumed that as a result of photoionization of F-centers haloid vacancies F^+ and polarons, and thereafter F-centers and F_2^+-centers are produced. Next, as a result of union either of F_2^- and F^+-centers, or F_2^+-centers and polarons the F_2-centers are formed. The system of kinetic equations for concentrations p, F^+, F', F_2^+ and F_2 are solved for several extreme cases, for which different time dependences of F- or F_2^+-centers are obtained, in particular the exponential and hyperbolic ones. It may be determined experimentally what kind of reaction is dominating during the formation of F'-or F_2^+-centers, if simultaneously with the absorption of light the kinetics of conductivity of a crystal during the illumination process as well as after a sudden interruption of illumination is investigated. (Author)

Vadilo, P.
THE EFFECT OF TEMPERATURE OF THE SOLUTION ON THE SHAPE OF GROWING CRYSTALS AND THE CAUSE OF FORMATION OF NEEDLE-SHAPED CRYSTALS. [1963] 9p. 2 refs.
Order from OTS or SLA $1.10 63-14605

Trans. of [Zhurnal Eksperimental'noi i Teoreticheskoi Fizika] (USSR) 1938, v. 8, p. 1381-1383.

DESCRIPTORS: *Crystal growth, Temperature, Solutions, *Crystals.

Zhukov, V. V.
A METHOD OF ACCURATE DETERMINATION OF LATTICE CONSTANTS FROM ASYMMETRIC X-RAY DIFFRACTION DIAGRAMS (Metodika Tochnogo Opredeleniya Periodov Reshetki po Asimmetrichnym Rentgenogrammam). July 62 [8]p. (foreign text included) 2 refs. [DSIR] NLL M. 3941.
Order from OTS or SLA $1.10 63-19927

Trans. of #Zavodskaya Laboratoriya (USSR) 1962, v. 28, no. 5, p. 590-592.

DESCRIPTORS: *Crystal lattices, Crystal structure, *X-ray diffraction analysis, Photometers, Standards, Calibration.

A procedure was developed for determining accurately, with the aid of guages, lattice constants from photometric curves of asymmetric X-ray diffraction diagrams obtained for plane specimens and reference standards in a focusing camera. The error of determination does not exceed 0.0004 kX. (Author)

Theoretical Physics

Yanoshi, L.
A PHILOSOPHICAL ANALYSIS OF THE SPECIAL THEORY OF RELATIVITY [PT. 1] (Filosofskii Analiz Spetisial'noi Teorii Otnositel'nosti) tr. by Zanis Stuberovskis. Apr 62 [38]p. 12 refs.
E-T-R-R-62-25; AD-298 187.
Order from OTS or SLA $3.60 63-15786

Trans. of Voprosy Filosofii (USSR) 1961 [v. 15] no. 8, p. 101-117.

DESCRIPTORS: *Relativity theory, Analysis, Philosophy.

Yanoshi, L.
A PHILOSOPHICAL ANALYSIS OF THE SPECIAL THEORY OF RELATIVITY [PT. 2] (Filosofskii Analiz Spetsial'noi Teorii Otnositel'nosti) tr. by Zanis Stuberovskis. May-June 62 [34]p. 10 refs.
E-T-R-R-62-25A; AD-298 107.
Order from OTS or SLA $3.60 63-15785

Trans. of Voprosy Filosofii (USSR) 1961 [v. 15] no. 9, p. 89-104.

DESCRIPTORS: *Relativity theory, Analysis, Philosophy, *Mass-energy relation.

Its successes and the role it plays in contemporary physics, the theory of relativity owes apparently to the fact that the principle of relativity, although formulated idealistically, expresses one of the most important laws of physics. We have shown that the principle of relativity can be replaced by another principle, which we call Lorentz's principle. Lorentz's principle, expressing the general character of the laws of nature without unnecessary references to observers, is mathematically equivalent to Einstein's principle. Therefore it leads more simply to all the results already obtained by the theory of relativity. The advantage of Lorentz's principle is that it eliminates the necessity of complicated idealistic reasoning as to what the observer sees or does. This article also contains some remarks on the principle of mass and energy intercoupling and also on the physical sense of the rest-system. (Author) (See also 63-15786)

Thermodynamics

Baranaev, M. K.
THE EVAPORATION OF SOLID BODIES, tr. by Ingeborg V. Baker. 16 May 63 [9]p. 10 refs.
RSIC-13. AD-404 919
Order from OTS or SLA $1.10 63-19563

Trans. of Zhurnal Fizicheskoi Khimii (USSR) 1946, v. 20, p. 399-402.

DESCRIPTORS: Solids, *Ice, *Phenols, *Benzenes, *Camphors, Iodine, *Evaporation, Vapor pressure, Test equipment.

Measurements were performed on the accommodation coefficients for ice, solid phenol, solid benzene and camphor.

Bretsznajder, S. and Moscicka, I.
DETERMINATION OF LOCAL TRANSIENT HEAT-TRANSFER COEFFICIENTS IN MODELS. July 63, 5p. 21 refs.
Order from ICE in v. 3, no. 3, $15.00/year

Trans. of Przemysl Chemiczny (Poland) 1963 [v. 19(42)] no. 1, p. 35-[37].

DESCRIPTORS: Chemical engineering, *Heat transfer, Thermistors, Temperature, Tests, *Heat transfer coefficients, Experimental data.

Cuta, F., and Strafeld, F.
LA SECONDE CONSTANTE DE DISSOCIATION DE L'ACIDE CARBONIQUE ENTRE 60° - 90°C (Druha Disociační Konstanta Kyseliny Uhličité od 60°C do 90°C) (The Second Dissociation Constant of Carbonic Acid between 60 and 90°C). 14p. 10 refs.
Order from OTS, ETC or CNRS $0.80 62-26943

Trans. in French of Chemicke Listy (Czechoslovakia) 1954, v. 48, p. 1308-1313.

DESCRIPTORS: *Carbonic acids, *Dissociation, Hydrogen ion concentration, Hydrogen electrodes, Glass electrodes, Theory, Experimental data.

Khitrin, L. N.
DIFFUSION PROCESSES AND THE CHARACTERISTICS OF IGNITION OF GAS MIXTURES BY INCANDESCENT BODIES. July 63, 5p. 12 refs.
Order from ICE in v. 3, no. 3, $15.00/year

Trans. of #Inzhenerno-Fizicheskii Zhurnal (USSR) 1963 [v. 6] no. 1, p. 19-[26].
Another trans. is available from OTS $5.00 in 63-21746, JPRS-19046, 6 May 63, 313p.

DESCRIPTORS: *Ignition, *Gases, Lighting equipment, Heat transfer, Mass transfer, Diffusion, Oxygen, Chemical engineering.

Motulevich, V. P.
TURBULENT HEAT AND MASS TRANSFER ON A PLATE WITH POROUS SUCTION AND SUPPLY OF VARIOUS GASES. July 63, 7p. 12 refs.
Order from ICE in v. 3, no. 3, $15.00/year

Trans. of #Inzhenerno-Fizicheskii Zhurnal (USSR) 1963 [v. 6] no. 1, p. 3-[13].
Another trans. is available from OTS $5.00 in 63-21746, JPRS-19046, 6 May 63, 313p.

DESCRIPTORS: Chemical engineering, *Heat transfer, *Mass transfer, Porous materials, Boundary layer, Gases, Turbulence.

Novozhilov, B. V.
TRANSIENTS IN THE BURNING OF POWDERS. 15 Mar 63 [14]p. 1 ref. FTD-TT-63-112. AD-401 741
Order from OTS or SLA $1.60 63-19196

Unedited rough draft trans. of Zhurnal Prikladnoi Mekhaniki i Tekhnicheskoi Fiziki (USSR) 1962, no. 5, p. 83-88.

DESCRIPTORS: *Combustion, Phase studies, *Powders, Velocity, Pressure, Temperature.

Two types of transients are examined: (1) the transition from a steady-state regime of burning at initial pressure p_0, to a steady-state regime of burning at pressure p_1, during which pressure changes instantaneously; and (2) the transient in a powder chamber from steady-state burning at pressure p_0 to steady-state burning at pressure p_1. In this case the transition is accomplished by an instantaneous change of the nozzle section from the value σ_0, corresponding to p_0, to the value σ_1, corresponding to p_1

Pelevin, V. S.
AC-ELECTRIC ARC INSTALLATION FOR THE OBTAINMENT OF HIGH TEMPERATURE GAS FLOW. 13 Feb 63 [10]p. 7 refs. FTD-TT-62-1753. AD-401 731
Order from OTS or SLA $1.10 63-19198

Unedited rough draft trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1961, no. 12, p. 32-36.

DESCRIPTORS: *Electric arcs, Alternating current, *Gas flow, *High-temperature research, *Laboratory equipment, Construction, Design, Magnetohydrodynamics.

The basic principles of operation of an electric arc device for obtaining a high-temperature gas flow are indicated in the paper. The device, which is supplied by alternating current, is so designed that it is possible to use the experience obtained in the setting up of equipment to obtain a high-temperature gas flow over a lengthy period of time. (Author)

Shitsman, M. E.
THE PROBLEM OF CRITICAL HEAT EXCHANGE IN STEAM-GENERATING CHANNELS. July 63, 5p. 14 refs.
Order from ICE in v. 3, no. 3, $15.00/year

Trans. of #Inzh[enerno]-Fiz[icheskii] Zh[urnal] (USSR) 1962, v. 5, no. 9, p. 9-[15].
Another trans. is available from ATS $10.50 as ATS-26Q67R [1963] 7p.

DESCRIPTORS: Heat exchangers, *Steam, *Heat transfer, Cylindrical bodies, Chemical engineering.

Tabachnikov, A. G. and Moiseev, M. G.
CALCULATING THERMODYNAMIC PROPERTIES OF REAL GASES AT HIGH TEMPERATURES [AND] LEAKAGE OF GAS INTO A LIQUID THROUGH THE LAVAL NOZZLE. 5 Apr 63 [18]p. 31 refs. FTD-TT-63-85. AD-402 598.
Order from OTS or SLA $1.60 63-19316

Unedited rough draft trans. of #Inzhenerno-Fizicheskii Zhurnal (USSR) 1962, v. 5, no. 9, p. 25-32, 81-84.

DESCRIPTORS: *Gases, Thermodynamics, Liquids, *Laval nozzles, Equations of state, Nitrogen, High temperature research, Gas flow.

Usmanov, A. G. and Mukhamedzyanov, G. Kh.
APPLICATION OF THE METHOD OF SIMILARITY TO THE INVESTIGATION OF THE VISCOSITY AND THERMAL CONDUCTIVITY OF LIQUIDS. July 63, 6p. 16 refs.
Order from ICE in v. 3, no. 3, $15.00/year

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Khimiya i Khimicheskaya Tekhnologiya (USSR) 1962 [v. 5] no. 6, p. 986-994.

DESCRIPTORS: Chemical engineering, *Viscosity, Heat transfer, Liquid metals, *Thermal conductivity, Organic compounds.

RESEARCH METHODS, TECHNIQUES AND EQUIPMENT

NEWS OF THE ACADEMY OF SCIENCES USSR, DEPARTMENT OF TECHNICAL SCIENCES, TECHNICAL CYBERNETICS, 1963, NO. 2. 8 July 63, 434p. JPRS: 20054.
Order from OTS $6.00 63-31222

Trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Tekhnicheskaya Kibernetika (USSR) 1963, no. 2, p. 1-192.
##Another trans. of p. 3-16 is available from OTS $0.75 as 63-31172, JPRS-19966, 1 July 63, 26p.

DESCRIPTORS: *Cybernetics, Pattern recognition, Signal-to-noise ratio, Mathematical logic, Reliability (Electronics), Correlation techniques, Statistical functions, Nonlinear systems, Automatic, Control systems, Gyro stabilizers, Linear systems, *Digital computers, Servomechanisms, *Communication theory.

Contents:
##Selection of criteria in mechanical recognition, by A. A. Kharkevich
##Some approaches to a practical solution of the problem of recognition, by A. A. Kharkevich
Increasing noise-resistance in the transmission of a binary message by binary channel, by A. M. Kukinov and D. S. Lebedev
On the question of a synthesis of logical schemes to detect malfunctions and to control the state of complex systems, by I. M. Sindeev
Calculation of the mean time of failure-free operation of duplicated equipments with automatic switching and restoration of reserve, by A. L. Garkavi and V. B. Gogolevskii
Reliability of redundant systems containing identical-type equipment, by I. P. Paderno
Determining the characteristics of automatic lines with multidimensional parameters by correlation methods, by N. S. Raibman
The problem of optimum energy distribution when signals are detected by using Neiman-Pearson, by V. P. Perov
Determining the optimum discrete filter in the presence of random transients and white noise interference, by P. D. Krut'ko
Fast response of step-by-step systems of automatic scanning under the action of random interferences, by B. A. Besedin and G. A. Medvedev
The application of noise functions for the investigation of nonlinear systems having a multiplier link, by G. P. Molotkov
On errors of gyroscopic stabilizers, by B. I. Nazarov
Determination of accuracy characteristics of linear systems with fixed parameters in special cases, by A. N. Sklyarevich
The problem of constructing automatic control systems with variable structures for linear objects, by S. V. Emel'yanov and V. A. Taran
Construction of an optimum non-linear second order dynamic system, by M. E. Leont'ev
Theory of self-regulation and invariance of multi-parameter control system with digital computers, V. Streitz and I. Ruzicka
The synthesis of discrete systems which include continuous links, by V. Ya. Katkovnik and others
Analysis of auto-oscillations in servomechanisms having dry friction and other non-linearities, by A. B. Baltrushevich
Stability of the periodic state in relay systems containing members with intermittently fluctuating parameters, by V. I. Teverovskii
Obtaining the adjusting signal in self-optimizing systems with frequency filters, by V. I. Kostyuk
The effects of interference on discrete systems of automatic optimization, by V. P. Tarasenko
International Symposium on the Theory of Relay Devices and Terminal Automata, Moscow, 24 Sep-2 Oct 62.

TRANSLATIONS ON COMMUNIST CHINA'S SCIENCE AND TECHNOLOGY NO. 38. 27 July 63, 30p. JPRS: 19907.
Order from OTS $1.00 63-31142

Trans. of Chung Kuo Ti Chih (Chinese People's Republic) 1962, no. 7, p. 1-4; and from Chung Kuo Hsin Wen (Chinese People's Republic) 1963, 12 May, p. 7; 13 May, p. 5, 9; 15 May, p. 4; Jen Min Jih Pao (Chinese People's Republic) 1963, 11 May, p. 5; Kuang Ming Jih Pao (Chinese People's Republic) 1963, 30 Apr, p. 2; 11 May, p. 5.

DESCRIPTORS: *Scientific research, *China, *Geology, Training, Chemist, *Physical chemistry, Engineering, *Psychology, Medical research, *Neoplasms, Therapy, Public health, Agriculture, Biology.

Contents:
Strengthen strict basic training in the practice of geologic work, by Kuo Wen-k'uei
Macromolecular physical chemist Ch'ien Jen-Yuan, by Lo Ying
Introducing engineering psychology, by Li Chia-chih and Hsü Lien-ts'ang
An interview with Wu Huan-Hsing on tumor treatment in China
Medical and health workers actively serve the peasants
A visit to the Peiping agricultural university, by Chang Yu
Zoologist Huang Wen-chi discusses the relationship between the horned owl and man.

TRANSLATIONS ON COMMUNIST CHINA'S SCIENCE AND TECHNOLOGY NO. 40. 3 July 63, 17p. JPRS: 20022.
Order from OTS $0.50 63-31204

Trans. from Chung Kuo Hsin Wen (Chinese People's Republic) 1963, 3 May, p. 9; 4 May, p. 7; 6 May, p. 8, 11-12; Pei Ching Jih Pao (Chinese People's Republic) 1963, 20 Mar, p. 2; 23 Mar, p. 1.

DESCRIPTORS: *Scientific research, *China, Education, Animals, Ungulates, *Television stations, *Engineering personnel.

Contents:
Graduates of engineering schools in Peiping take up graduation practices in factories
Graduation tasks undertaken by the graduates of polytechnic institutions
Southern musk-deers discovered in Kwangtung
Peiping television station observes fifth anniversary
Busy activities staged in Tientsin science hall
Some new varieties of sugar cane in Kwangtung.

WORKS OF THE ACADEMY OF SCIENCES, USSR, 1963, VOL. 149, NO. 2: [SELECTED] TRANSLATIONS 18 July 63, 35p. JPRS: 20231.
Order from OTS $1.00 63-31320

Trans. of Akademiya Nauk SSSR. Doklady, 1963, v. 149, no. 2, p. 268-271, 321-323, 363-366, 431-441. ##Another trans. of p. 438-441 is available from OTS or SLA $1.10 as 63-16410, 5 May 63 [8]p.

DESCRIPTORS: *Scientific research, *Reports, Control systems, Mathematical analysis, Cyclohexenones, Peroxides, Electrons, Paramagnetic resonance, Hydroxides, Electron microscopy, Cartilage, Marine biology, Biophysics, Luminescence, Calculus of variations.

Contents:
Variational problems concerning optimum conditions of control processes with functionals depending on intermediates coordinate values, by V. A. Troitskii
Radicals: products of the thermal decomposition of substituted cyclohexadieneone peroxide, by V. D. Pokhodenko and others
Electron paramagnetic resonance spectra of the hydrated electron in irradiated frozen alkaline solutions, by B. G. Ershov and others
Electron microscopic examination of cartilage cell differentiation in a regenerating bone, by L. N. Mikhailova
Luminescent analysis of lacustrine detritus, by A. G. Rodina
##The mechanism of the biological action of a pulsed magnetic field, by N. A. Solov'ev.

Butkovskii, A. G. and Lerner, A. Ya.
ON THE OPTIMAL CONTROL OF SYSTEMS WITH DISTRIBUTED PARAMETERS [Ob Optimal'nom Upravlenii Sistemami s Raspredelennymi Parametrami]. [1962] [9]p. 11 refs.
Order from OTS or SLA $1.10 62-10174

Trans. of Akademiya Nauk SSSR. Doklady, 1960, v. 134, no. 4 [p. 778-781].
Another trans. is available from OTS $1.10 as AD-264 156, STL-TR-61-5110-10, Apr 61, 9p.

DESCRIPTORS: *Automation, *Control systems, Vector analysis, Functions, *Partial differential equations, Difference equations, *Programming, Temperature, Heat transfer, Theory, Sheets, Metals, Time, Heat exchangers.

Three very general optimal control problems are formulated wherein the controlled process is governed by a partial differential equation and the control forces are subjected to constraints. As an example of the second of these three problems the author considers the optimal control of the temperature, Q, within a metal slab as it moves through a furnace. (Author)

Chu, Hsi-ying and Ch'en, Nien-i.
SOLVING THE RIDDLE OF THE CAUSE OF TRACHOMA [AND] THE THEORY AND APPLICATION OF MOLTEN SALT SOLUTION. Translations on Communist China's Science and Technology No. 41. 15 July 63, 20p. 14 refs. JPRS: 20166.
Order from OTS $0.75 63-31281

Trans. of K'o Hsüen T'ung Pao (Chinese People's Republic) 1963, no. 4, p. 1-6 and from Ta Kung Pao (Chinese People's Republic) 1963, 16 June, p. 3.

DESCRIPTORS: *Scientific research, China, *Trachoma, Etiology, Viruses, *Salts, *Fused materials, Thermodynamics, Static electricity, Energy, Mathematical analysis, Entropy.

Erdey-Gruz, Tibor.
STATUS OF THE NATURAL SCIENCES AND NATIONAL LONG-RANGE RESEARCH PLAN. 22 July 63, 16p. JPRS: 20275.
Order from OTS $0.50 63-31342

Trans. of Felsooktatasi Szemle (Hungary) 1963, v. 12, no. 4, p. 197-207.

DESCRIPTORS: *Scientific research, Science, Scientific personnel.

Li, Se-yong.
RESEARCH IN MACHINE TRANSLATION IN THE DEMOCRATIC PEOPLE'S REPUBLIC OF KOREA. Foreign Developments in Machine Translation and Information Processing No. 133. 16 July 63, 14p. JPRS: 20191.
Order from OTS $0.50 63-31299

Trans. of Choson Minju Chu'ui Inmin Konghwaguk. Kwahakkwan Tongbo [sic] (Korea) 1962, no. 6, p. 46-51.

DESCRIPTORS: *Machine translation, *Korea, Language, Research program administration.

Communication Theory

Grushko, I. I.
AN OPTIMUM IDENTIFYING DEVICE FOR SYSTEMATIC CODES AND CERTAIN TYPES OF CHANNELS. 20 Mar 63 [11]p. 4 refs. FTD-TT-63-248.
Order from OTS or SLA $1.60 63-19337

Unedited rough draft trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Energetika i Avtomatika, 1961, no. 3, p. 105-109.

DESCRIPTORS: *Communication theory, Data transmission systems, *Coding, Identification, Probability, Signals.

A method of constructing an optimum identifying device for systematic correcting codes is considered. In this case it is assumed that the channel is given at the output of the threshold device by the stochastic matrix of the conversion of the elementary signals. (Author)

Hahn, W.
THE LONG-DISTANCE RADIO STATION AT NAUEN (Die Grossfunkstelle Nauen). [1963] [9]p. (foreign text included) 1 ref.
Order from SLA $1.10 63-16405

Trans. of Telegraphen-, Fernsprech-funk- und [Fernsprech]-technik (Germany) 1936, v. 25, no. 5, p. 117-118.
Another trans. is available from SLA as 58-195.

DESCRIPTORS: *Radio stations, *Radio transmitters, *Germany, Radio communication systems, Operation.

Kuzina, A. M., Ramm, N. S., and Semenchenko, I. V.
USE OF POLARIZATION LIGHT FILTERS IN AERIAL PHOTOGRAPHIC SEA SURVEYS. [1963] [15]p. 18 refs. AERDL T-1501; AD-290 557.
Order from from OTS or SLA $1.60 63-13406

Trans. of [Izvestiya Vysshikh Uchebnykh Zavedenii. Geodeziya i Aerofotos'emka] (USSR) 1960, no. 6, p. 83-95.

DESCRIPTORS: *Aerial photography, *Polarizing filters, Photographic filters, *Hydrographic surveying, Sun light, Reflection, Oceans.

Aerial photographic surveys of the surface of the sea are being performed to investigate sea waves and to map currecnts. For these reasons, the struggle against errors occuring in aerial photographic surveys of seas and oceans assumes considerable importance. Among such serious errors is the image of the 'sun spots', that is, the mirror reflection, on the aerial photographic film, of the sun light striking the surface of the water, and the sharp increase in light dissipation within the objective of the aerial camera, resulting from the intense brightness of the sun spot this results in an excess of light on the portion of the aerial photograph that is opposite the spot image. The theory and methodology for reduction of these errors with the aid of polarized light filters (polaroids) are presented. (Author)

Schardin, Hubert.
THE TOEPLER SCHLIEREN METHOD: THE BASIS FOR ITS APPLICATION AND QUANTITATIVE EVALUATION (Das Toeplersche Schlierenverfahren: Grundlagen fur Seine Anwendung und Quantitative Auswertung). [1963] [107]p. (foreign text included) 55 refs.
Order from SLA $9.10 63-14926

Trans. from VDI-Forschungsheft (Germany) 1934, no. 367.
Another trans. is available from SLA as 57-00599, 83p. (PB-122 830).

DESCRIPTORS: *Schlieren photography, Photography, Optics, Light, Deflection, Sensitivity.

The theoretical basis of the Toepler schlieren method is developed to the degree that, with the formulae derived, a suitable form for the apparatus can be adopted, and the light deviation within the object can be computed from the known density relations. Thus it may be determined in advance whether in a definite case that application of the schlieren method offers the prospect of results. In simple cases, conversely, conditions in the object can be computed from the light deviation. Hence there is no longer the disadvantage of the schlieren method failing to give a quantitative evaluation. The most important fields of application are collected together, and for each one the theoretical basis is treated as far as appears necessary for a precise application of the schlieren method. (Author)

SOCIAL SCIENCES

GENERAL MEETING OF THE ACADEMY OF SCIENCES USSR, 14-15 May 63. 29 July 63, 40p. JPRS: 20399.
Order from OTS $1.25 63-31408

Trans. of Akademiya Nauk SSSR. Vestnik, 1963 [v. 33] no. 6, p. 3-25.

DESCRIPTORS: *Scientific organizations, Scientific research, *Conferences.

Contents:
Measures for improving the activity of the academy of Sciences USSR and the Academies of Sciences of the Union Republics, by M. V. Keldysh
The design of the new chapter of the Academy of Sciences USSR, by M. I. Agoshkov.

USSR INDUSTRIAL DEVELOPMENT: SOVIET REGIONAL ECONOMY NO. 53. 18 July 63, 23p. JPRS: 20222.
Order from OTS $0.75 63-31314

Trans. of Nauka i Tekhnika (Latvian SSR) 1963, no. 5, p. 3; and from Vechernaya Moskva (USSR) 1963, 25 May, p. 2; Rabochaya Gazeta (USSR) 1963, 2 June, p. 2-3; Kazakhstanskaya Pravda (USSR) 1963, 9 June, p. 1-2.

DESCRIPTORS: *Industrial production, *Economics, Design, Engineering, Industrial relations, Agricultural machinery, Construction.

Contents:
Moscow State Design Institute, by Roza Lerman
Chernomorskii sovnarkhoz, by L. Kartashev and others
Cooperation between Leningradskii and Latvian economic regions
Competition of virgin-land workers
For a further improvement of work in industry and construction.

Huttunen, J., Pensala, V., and Valve, V.
ABOUT SMOKING AMONG SCHOOL PUPILS. [Feb 61] 8p. 6 refs.
Order from SLA $1.10 63-16685

Trans. of Duodecim (Finland) 1960, v. 76, p. 487-492.
Another trans. is available from K-H $10.00 as K-H 10607-b, Feb 61, 8p.

DESCRIPTORS: *Tobacco, Consumption, *Students, Cigarettes, Smokes.

Smoking among students in five schools of the capital city and the rural communities was explained. Among the investigated schools were both lyceums and coeducational schools. The obtained results indicated that 21% of the students were smokers: 29% male and 13% female students. The number of smokers, and especially the number of habitual smokers among the boys increased with age. The type of school had no effect with respect to the common occurrence of smoking. The most significant difference was between the smoking habit of country and city girls. Habitual smokers among the female students of the rural areas

did not exist. Smoking was found to diminish when transferred from middle school to high school. Differences could not be detected between educational progress and prudence of smokers and nonsmokers. Smoking was usually performed secretly without the parents' knowledge. Only 21% of the students represented by the data had been given permission to smoke by their parents. (Author)

Shteinberg, Evgenii L'vovich.
THE STRUGGLE OF THE RUSSIAN PEOPLE FOR AN OUTLET TO THE PACIFIC. 1950 [63]p. 30 refs.
Order from OTS or SLA $6.60 62-19036

Trans. of mono. Bor'ba Russkogo Naroda za Vykhod v Tikhii Okean, Moscow, 1949.

DESCRIPTORS: *Pacific Ocean, *Geography, *Political science, *Exploration, Bibliographies, *Navigators, Navigation, Commerce, Minerals, Asia, North America, Japan, History, Armed forces operations, Warfare, Oceanographic vessels.

Tejada y Sainz, Juan de Dios.
BULK SUGAR SHIPMENTS. I. ARGUMENTS OF THE PARTIES. II. HISTORY, DEFINITIONS AND EXTENT OF THE SYSTEM. III. THE LABOR VIEWPOINT. IV. THE SUGAR BEACH-HEAD. [1963] [8]p.
Order from SLA $1.10 63-16372

Trans. from Diario de la Marina (Cuba) 1954, 4 Feb; 10 Feb; 11 Feb; 19 Feb.

DESCRIPTORS: *Carbohydrates, *Transportation, *Commerce, Handling, History, Labor.

BOOK REVIEWS

The following book reviews can be ordered by number from OTS or SLA for $1.10 each. Each review includes, in addition to the material shown, a detailed statement of the coverage of the book and detailed table of contents.

BR-SOV/6202
Budnikov, P. P., A. S. Berezhnoy, I. A. Bulavin, G. P. Kalliga, G. V. Kukolev and D. N. Poluboyarinov
TECHNOLOGY OF CERAMICS AND REFRACTORY MATERIALS (Tekhnologiya keramiki i ogneuporov), 3d ed., rev. and enl. Moscow, Gosstroyizdat, 1962. 707p. Errata slip inserted. 15,000 copies printed.

BR-SOV/6204
Perel'man, Roman Grigor'yevich
ENGINES FOR INTERGALACTIC SHIPS (Dvigateli galakticheskikh korabley). Moscow, Izd-vo AN SSSR, 1962. 197p. (Series: Akademiya nauck SSSR. Nauchnopopulyarnya seriya). Errata slip inserted. 25,000 copies printed.

BR-SOV/6220
Rakov, Veniamin Izrailevich
INDICATOR APPARATUS IN RADAR STATIONS (Indikatornyye ustroystva radiolokatsionnykh stantsiy) Leningrad, Sudpromgiz, 1962. 531p. 7900 copies printed.

BR-SOV/6230
CATALYSIS IN THE UNIVERSITY (Kataliz v vysshey shkole) [Moscow] Izd-vo Moskovskogo univ., 1962. 475p. (Series: Its: Trudy, no. 1, pt. 1) Errata slip inserted. 3000 copies printed.

BR-SOV/6235
Anisimov, B. V. and V. N. Chetverikov
FUNDAMENTALS OF THE THEORY AND DESIGN OF DIGITAL COMPUTERS (Osnovy teorii i proyektirovaniya tsifrovykh vychislitel'nykh mashin) Moscow, Mashgiz, 1962. 431p. 22,000 copies printed.

BR-SOV/6253
Perfilov, Nikolay Aleksandrovich, Oleg Valdimirovich Lozhkin, and Vsevolod Ivanovich Ostroumov
NUCLEAR REACTIONS UNDER THE ACTION OF HIGH-ENERGY PARTICLES (Yardernyye reaktsii pod deystviyem chastits vysokikh energiy). Moscow, Izd-vo AN SSSR, 1962. 250p. Errata slip inserted. 3000 copies printed.

BR-SOV/6254
Petrov, Rem Viktorovich
IMMUNOLOGY OF ACUTE RADIATION SICKNESS (Immunologiya ostrogo luchevogo porazheniya). Moscow, Gosatomizdat, 1962. 266p. 5000 copies printed.

BR-SOV/6255
Skorokhod, Anatoliy Vladimirovich
INVESTIGATIONS IN THE THEORY OF RANDOM PROCESSES; STOCHASTIC DIFFERENTIAL EQUATIONS AND LIMIT THEOREMS FOR MARKOV PROCESSES (Issledovaniya po teorii sluchaynykh protsessov; stokhasticheskiye differentsial'nyye uravneniya i predel'nyye teoremy dlya protsessov Markov). Kiyev, Izd-vo Kiyev. Univ., 1961. 215p. 5000 copies printed.

BR-SOV/6256
Berezin, Sergey Yakovlevich
CALCULATING AUTOMATIC-CONTROL SYSTEMS WITH THE AID OF INVERSE AMPLITUDE-PHASE CHARACTERISTICS (Raschet sistem avtomaticheskogo regulirovaniya s pomoshch'yu obratnykh amplitudno-fazovykh kharakteristik). Leningrad, Sudpromgiz, 1962. 336p. 4500 copies printed.

BR-SOV/6257
Sobolev, Sergey L'vovich
SOME APPLICATIONS OF FUNCTIONAL ANALYSIS TO MATHEMATICAL PHYSICS (Nekotoryye primeneniya funktsional'nogo analiza v matematicheskoy fizike) Novosibirsk, Izd-vo AN SSSR. Sib. otd., 1962. 255p. 3000 copies printed.

BR-SOV/6258
Skulachev, Vladimir Petrovich
THE RELATIONSHIP BETWEEN OXIDATION AND PHOSPHORYLATION IN THE RESPIRATORY CIRCUIT (Sootnosheniye okisleniya i fosforilirovaniya v dykhatel'noy tsepi) Moscow, Izd-vo AN SSSR, 1962. 155p. Errata printed on inside of back cover.

BR-SOV/6259
Poltavets, Ivan Mikhaylovich, Faina Fedorovna Sinitsyna, Mark Petrovich Filippov, and Mikhail Panteleymonovich Kolyada
ACUTE RADIATION DISEASES AND THEIR TREATMENT (Ostryye radiatsionnyye porazheniya i ikh lecheniye) Kiyev, Medgiz UkrSSR, 1962. 154p. (Series: Biblioteka prakticheskogo vracha) 4180 copies printed.

BR-SOV/6262
Chechetkin, Aleksandr Vasil'yevich
HIGH-TEMPERATURE HEAT-TRANSFER AGENTS (Vysokotemperaturnyye teplonositeli) 2d ed., rev. and enl. Moscow, Gosenergoizdat, 1962. 427p. Errata slip inserted. 6500 copies printed.

BR-SOV/6267
Davydova, Viktoriya Pavlovna and Mikhail Grigor'yevich Voronkov
POLYPHOSPHAZENES; POLYMERIC AND MONOMERIC PHOSPHONITRILE COMPOUNDS (Polifosfazeny; polimernyye fosfonitril'nyye soyedineniya) Moskva, Izd-vo AN SSSR, 1962, 86p. 2600 copies printed.

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ACTA BIOCHIMICA POLONICA, 1964 [VOL. 11].
PL-480 simultaneous publication in English in process.

ACTA PHYSIOLOGICA POLONICA, 1964 [VOL. 15].
PL-480 simultaneous publication in English in process.

ACTA POLONIAE PHARMACEUTICA, 1963 [VOL. 20] NOS. 4-6
PL-480 simultaneous publication in English for 2nd half of 1963 in process.

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PL-480 simultaneous publication in English in process.

ANALYSES OF REFRACTORY COMPOUNDS.
Mono. Analiz Tugoplavkikh Soedinenii, Moscow, 1962, 256p.

ARCHIWUM IMMUNOLOGII I TERAPII DOZWIADCZALNEJ (POLAND) 1964. [VOL. 12].
PL-480 simultaneous publication in English in process.

BULLETIN OF THE BORIS KIDRIC INSTITUTE OF NUCLEAR RESEARCH, 1963 [VOL. 14].
Simultaneous publication in English of PL-480 Institut za Nuklearne Nauke. [Bilten] (Yugoslavia) 1963 [v. 14].

DIAGNOSIS AND TREATMENT OF RADIOACTIVE POISONING: [SELECTED PAPERS].
[International Atomic Energy Agency] Sci[entific] Meeting, Vienna, 15-18 Oct 62. Proc[eedings]. 1963, p. 287-306, 381-385 (STI/PUB/65).

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PL-480 simultaneous publication in English in process.

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PL-480 simultaneous publication in English for 2nd half of 1963 in process.

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PL-480 simultaneous publication in English in process.

HERALD OF THE ACADEMY OF MEDICAL SCIENCES, USSR, 1963, VOL. 18, NO. 8.
Akademiya Meditsinskikh Nauk SSSR. Vestnik, 1963, v. 18, no. 8.

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LARGE RADIATION SOURCES IN INDUSTRY, VOL. I: [SELECTED PAPERS].
[International Atomic Energy Agency] Conf[erence] Warsaw, 8-12 Sep 59. Proc[eedings] 1960, v. 1, p. 105-114, 141-147, 149-162, 163-177, 191-221, 341-346, 347-358. (STI/PUB/12, v. 1).

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[International Atomic Energy Agency] Conf[erence] Warsaw, 8-12 Sep 59. Proc[eedings] 1960, v. 2, p. 81-95, 131-138, 149-163, 261-271, 321-339 (STI/PUB/12, v. 2).

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NOTICE TO MARINERS.
Uzveshcheniya Moreplavatelyam (SSSR Ministerstvo Oborony, no. 1) p. 2-26, 28-39.

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[Joint Institute for Nuclear Research (USSR) P-1231, 1963, 195p.

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[International Atomic Energy Agency] Symp[osium] Athens, 19-23 Nov 62. Proc[eedings] 1963, p. 133-147, 335-341 (STI/PUB/68).

[RESEARCH ON GEOMAGNETISM AND AERONOMY]: SELECTED ARTICLES.
Mono. Issledovaniya po Geomagnetizmu i Aeronomii, Moscow, 1963, p. 3-16, 31-59, 77-90, 110-114.

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TREATMENT AND STORAGE OF HIGH-LEVEL RADIO ACTIVE WASTES: [SELECTED PAPERS].
[International Atomic Energy Agency] Symp[osium] Vienna, 8-12 Oct 62. Proc[eedings] 1963, p. 133-139, 397-410, 441-464, 569-577, 579-585, 599-619 (STI/PUB/63).

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HYDRODYNAMIC RESISTANCE AND HEAT TRANSFER OF ROTATING BODIES (OBJECTS).
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Mono. Khimiya Almazopodomnykh Poluprovodnikov, Leningrad, 1963, 222p.
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Mono. Klassen des Tierreichs, v. 4, bk. 1, Pentastomida, Berlin, 1935, 29p.

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Mono. Radioelektronika v Biologii, Moscow-Leningrad, n.d., 56p.

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Mono. Avtokolebaniya, Moscow, 1953, 170p.

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PRODUCTION OF STEEL BY THE METHOD OF ELECTROSLAG REMELTING.
Mono. Proizvodstvo Stali Metodom Elektroshlakovogo Pereplava, Moscow, 1962, 237p.

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Mono. Laminarnyi Pogranichnyi Sloi, Moscow, 1962, 479p.

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EXPLOSION WAVES IN GROUNDS.
Mono. Vzryvnye Volny v Gruntakh, Moscow, 1962, 101p.

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To be published by Holden-Day, Inc., 728 Montgomery St., San Francisco 11, Calif. Fall 64.

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Mono. Problemy Sploshnoi Elektrifikatsii SSSR i Tekhnicheskii Progress v Energostroitel'stve, Moscow/Leningrad, 1960, 45p.

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To be published by Holden-Day, Inc., 728 Montgomery St., San Francisco 11, Calif. June 64.

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THEORY OF OCEAN WAVES (Teroya Norskikh Voln).
[Akademiya Nauk SSSR]. Morskii Gidrofizicheskii Institut. Trudy, 1956, v. 9, 141p.

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Mono. Osnovnye Zadachi Teorii Laminarnykh Techenii [Moscow] 1961, p. 3-6, 269-313.

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ELECTRIC RESISTANCE WIRE STRAIN GAGES AND THEIR PRACTICAL APPLICATION.
Mono. Provolochnye Preobrazovateli i Ikh Tekhnicheskoe Primenenie, Moscow/Leningrad, 1957, 171p.

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MEASURING STRESSES OF MACHINE COMPONENTS.
Mono. Izmereniya Napryazhenii Detalei Mashin, Moscow, 1960, 114p.

PERIODICALS TRANSLATED COVER-TO-COVER

For basic list of Periodicals Translated Cover-to Cover see Technical Translations Volume 10, Number 1.

This basic list is kept up-to-date by giving only changes in the subsequent issues of Technical Translations.

Please note the following changes:

AKADEMIYA NAUK SSSR. DOKLADY
(Dodlady: Biochemistry Section)

Translation begins with 1957, v. 112, nos. 1-6.
1957 available in single article reprints from Consultants Bureau Enterprises, Inc. $5.00/article.
1958-1961 available in single issues individually priced from Office of Technical Services
1962 ff. available from Consultants Bureau Enterprises, Inc., 227 West 17th Street, New York, New York, 10011

ADADEMIYA NAUK SSSR. DOKLADY
(Doklady: Biological Sciences Sections)

Translation begins with 1957, v. 112, nox. 1-6.
1957-1961 available in single issues individually priced from Office of Technical Services.
1962 ff. available from Consultants Bureau Enterprises, Ins., 227 West 17th Street, New York, New York, 10011

AKADEMIYA NAUK SSSR. DOKLADY
(Doklady: Botanical Sciences Sections)

Translation begins with 1957, v. 112, nos. 1-6.
1957-1961 available in single issues individually priced from Office of Technical Services.
1962 ff. available from Consultants Bureau Enterprises, Inc., 227 West 17th Street, New York, New York, 10011

ENTOMOLOGICHESKOE OBOZRENIE
(Entomological Review)

Translation begins with 1958, v. 37, no. 1.
1958-1961 available in single issues individually priced from Office of Technical Services.
1962 ff. available from Scripta Technica, 1000 Vermont Avenue, N. W., Washington, D. C., 20005

FIZIOLOGIYA RASTENII (Plant Physiology)

Translation begins with 1957, v. 4, no. 1-
1957-1961 available in single issues individually priced from Office of Technical Services.
1962 ff. available from Scripta Technica, 1000 Vermont Avenue, N. W., Washington, D. C., 20005

GEOMAGNETIZM I AERONOMIYA
(Geomagnetism and Aeronomy)

Translation begins with 1961, v. 1, no. 1-

Order from:
American Geophysical Union — $20.00/year
1515 Massachusetts Avenue, N. W.
Washington, D. C., 20005

MIKROBIOLOGIYA
(Microbiology)

Translation begins with 1957, v. 26, no. 1-
1957-1961 available in single issues individually priced from Office of Technical Services.
1962 ff available from Consultants Bureau Enterprises, Inc., 227 West 17th Street, New York, New York, 10011

POCHVOVEDENIE
(Soviet Soil Science)

Translation begins with 1958, v. 53, no. 1-
1958-1961 available in single issues individually priced from Office of Technical Services.
1962 ff available from Scripta Technica, 1000 Vermont Avenue, N. W., Washington, D. C. 20005

RADIOTEKHNIKA I ELEKTRONICA
(Radio Engineering and Electronics Physics)

Translation begins with 1961, v. 6, no. 1-

Order from:
Special Subscription Department — $28.50/year
IEEE — $57.00/year
275 Madison Avenue
New York, New York, 10016

TEORIYA VEROYATNOSTEI I EE PRIMENENIYA
(Theory of Probability and its Applications)

Translation begins with 1956, v. 1, no. 1-

Order from:
Business Manager — $18.00/year
Society for Industrial and Applied Mathematics — $14.00/year* to members
Box 7541
Philadelphia, Pa., 19101